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Adaptive Teacher's Guide to teach sustainable entrepreneurial mindset to students

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1. Purpose and how to use this guide

1.1 Who this guide is for

This guide is written for teachers and trainers in vocational education and training (VET) who wish to develop a sustainable entrepreneurial mindset in their students through the Agora Lake platform (games.seisc.eu), the adaptive virtual simulation produced by the SEISC project. It assumes no prior experience of the platform, of adaptive learning or of entrepreneurship education. It does assume that the reader teaches, in any discipline, students aged roughly sixteen to twenty who work in teams and who can be given one classroom period at a time.

The guide addresses the teacher directly, because the platform is not self-sufficient. It generates scenarios, feedback and scores; it does not decide what a class should learn, when a team should stop and reflect, or how a decision taken in the simulation should be carried into the workshop that follows. Those decisions belong to the teacher, and the purpose of these pages is to make them easier to take.

1.2 What you will be able to do

By the end of the guide you will be able to open the platform as a teacher, create a class and its teams, and give students their credentials; explain to students what the five competence areas measure and why the simulation reacts differently to different mistakes; read the team logs and turn a score or a repeated error into a teaching decision; run the classroom activities that connect the simulation to your own subject; facilitate the two workshops on Design Thinking and the Triple Bottom Line business model; and evaluate, inside the platform, the six phases and the ten canvas blocks that students must complete before they can finish the journey. Each of these capabilities corresponds to a chapter, so the guide can be read from beginning to end before the first session or consulted one chapter at a time as the class advances.

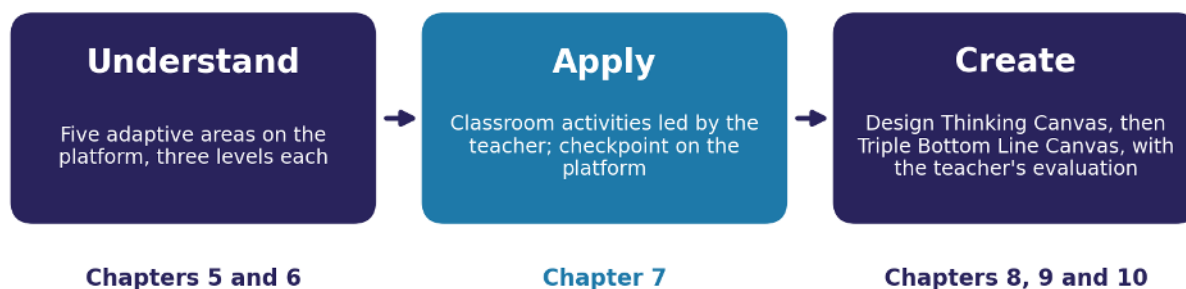
1.3 The learning journey in three phases

The Agora Lake experience follows an inductive path in three phases (Figure 1), and the structure of this guide follows the same order.

In the first phase, Understand, teams work through five adaptive areas of the simulation. Each area is built on one dimension of the sustainable entrepreneurial mindset and unfolds across three levels of cognitive demand. The platform observes each decision, identifies the type of reasoning behind a wrong answer and adjusts the next step accordingly. Chapters 5 and 6 cover this phase.

In the second phase, Apply, the class leaves the screen. The platform marks this moment with a single checkpoint that a team confirms before moving on; what happens between the simulation and that confirmation is the teacher's contribution. Chapter 7 provides one classroom activity for each competence area and shows how to anchor them in the curriculum of different disciplines.

In the third phase, Create, teams return to the platform for two structured workshops. In the first they apply Design Thinking to a shared case, EcoTrack Solutions, and choose one of five products to develop; in the second they build a Triple Bottom Line business model for the same product. Both workshops require the teacher's evaluation inside the platform, and neither can be completed without it. Chapters 8, 9 and 10 cover this phase.



Chapters 1 to 4: purpose, pedagogical rationale, competences and session plan

Figure 1. The learning journey in three phases and the chapters of this guide that cover each phase.

Chapters 2, 3 and 4 precede the operational chapters. They explain why the model is adaptive, which competences it develops and how the three phases fit together, so that the teacher can present the experience to students and colleagues with confidence and adapt it with judgement.

1.4 How the chapters map onto your calendar

A complete cycle requires, as an indication, between seven and nine classroom periods of fifty to sixty minutes: one for the introduction and the first area, two to three for the remaining areas, one to two for the Apply activities, one for each workshop, and one for feedback and reflection. Chapter 4 offers a session plan that can be compressed or extended. The two workshops are designed for ninety minutes each and are best run as a double period.

Before the first session, read chapters 1 to 5 and complete the start-up checklist in Annex C. Before the Understand sessions, read chapter 6 and keep the scenario reference in Annex D to hand. Before the Apply sessions, read chapter 7 and prepare the lesson plan in Annex A. Before each workshop, read chapter 8 or 9 together with the corresponding instructor manual, which can be downloaded from the teacher dashboard. Chapter 10 and the observation log in Annex B accompany the whole cycle.

1.5 What this guide describes, and what it does not

The guide describes the platform as it is available to teachers in September 2026. Every function, screen and score reported here has been verified on the live platform, and the screenshots are dated. Where the platform's own texts and the instructor manuals differ on a detail, the guide follows the behaviour of the platform and says so. Functions that were considered during the project but are not available to teachers are not described, so that nothing in these pages sends a teacher looking for something that does not exist.

The guide is not a substitute for the two instructor manuals, the case studies and the rubrics that accompany the workshops. Those documents contain the minute-by-minute facilitation of each workshop; this guide explains how the workshops fit into the adaptive journey and how the teacher's evaluation works inside the platform.

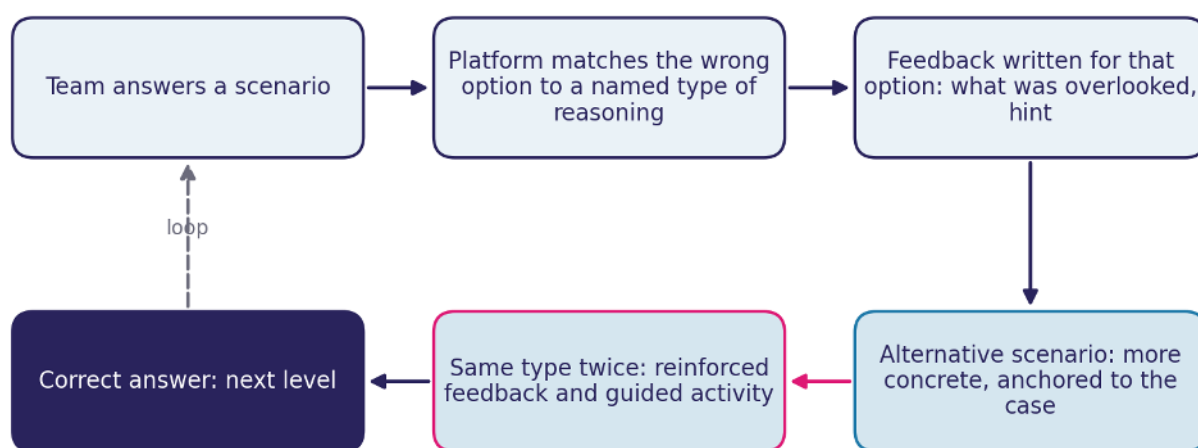
2. Why adaptive: the pedagogical rationale

2.1 The problem the model addresses

Two students who choose the same wrong answer rarely do so for the same reason. One may be reading a sustainability problem through a purely economic lens; another may be treating a design question as a marketing question; a third may have understood the principle but stopped at the first plausible solution. A

conventional multiple-choice exercise records all three as a single error and offers all three the same correction. The teacher, who knows that the reasons differ, has no time to intervene on each of them in a class of twenty-five.

The adaptive model of the Agora Lake platform was built around this ordinary difficulty. Its premise is that a wrong answer is diagnostic information, not merely a lost point, and that the value of a simulation lies in what it does after the error. Each competence area is therefore designed so that the platform can recognise the type of reasoning behind a mistake within two attempts and respond with a scenario, a feedback message and, if necessary, a guided activity that address that reasoning rather than the answer alone (Figure 2). The remainder of this chapter sets out the learning theories on which this design rests, shows where each of them is visible in the platform, and explains what they imply for the teacher's own role.



Within two attempts the type of reasoning is recognised and the matching reinforcement is activated

Figure 2. The adaptive cycle: from the team's answer to the recognition of the type of reasoning, the feedback, the alternative scenario and the guided activity.

2.2 The foundations of the model

The design of the platform rests on eight pedagogical foundations, which share their theoretical basis with the competence framework for students published by the project (Guraziu & Latorre, 2024). They are grouped here into five families, because in practice they act together.

Mastery and competence-based progression. Bloom (1968) argued that most students can reach mastery of what a course sets out to teach, provided that instruction is adjusted to the learner and that time, rather than attainment, is treated as the variable. The meta-analysis by Kulik, Kulik and Bangert-Drowns (1990) found that mastery programmes raise examination performance and that the gain is largest for weaker students. The same principle underlies the European approach to learning outcomes, in which progression is defined by what a learner knows, understands and is able to do rather than by time spent (Cedefop, 2017; Council of the European Union, 2017). In the platform, each of the fifteen levels (three per area) is defined by explicit criteria of demonstrated competence and of need for reinforcement. A team leaves a level only through a correct answer, whether at the main stage, at an alternative scenario or in a guided activity; a team that exhausts the reinforcement route receives directed feedback on the missing piece of reasoning and returns to the main stage of the same level.

The zone of proximal development and scaffolding. Vygotsky (1978) described the distance between what a learner can do alone and what the same learner can do with guidance, and located effective teaching in that distance. Wood, Bruner and Ross (1976) gave the name scaffolding to the graduated support by which

a more capable partner keeps a task within reach and withdraws as competence grows. The platform applies this in its branching: a wrong answer at the main stage does not lead to a repeat of the same question but to an alternative scenario, more concrete and more closely anchored to the case; a second error of the same type activates a guided activity with data, a worked situation and a single question to resolve. Support increases only as long as it is needed.

Formative assessment and feedback. Scriven (1967) introduced the distinction between summative evaluation, which judges a completed programme, and formative evaluation, which informs it while it is still in progress; Bloom, Hastings and Madaus (1971) carried the distinction into classroom assessment. The review by Black and Wiliam (1998) established that frequent, specific feedback produces substantial learning gains, and Hattie and Timperley (2007) showed that feedback is most effective when it tells the learner where they are going, how they are doing and what to do next. Shute (2008) added that formative feedback should be timely, specific, non-evaluative and matched to the learner's need. In the platform every answer, right or wrong, is followed by a message written for that option: a correct answer receives an explanation of why it is correct, a wrong answer receives an explanation of what the choice overlooked and a hint towards the alternative scenario. The score is displayed, but the feedback is not the score.

Cognitive load. Sweller (1988) showed that problem solving by trial and error consumes working memory that is then unavailable for learning, and that instruction is more effective when the demand it places on the learner is controlled. The platform reflects this in two ways. Within each area, the three levels move from recognising a problem, through analysing its interconnections, to designing an integrated solution, in step with the revised taxonomy of Anderson and Krathwohl (2001) on which the competence framework is built. Within each level, the alternative scenarios and guided activities reduce the demand rather than increasing it: they present fewer variables, concrete figures from the case and a narrower question, so that a student who is struggling meets a task that is easier to hold in mind, not a harder one. The same principle governs the data of the case. The Understand phase works on a reduced version of the event, five hundred athletes and two thousand sports tourists, so that the figures of each scenario can be held in mind while the reasoning is being learned; the Apply activities and the two workshops then move to the full EcoTrack case, four thousand athletes, ten thousand sports tourists and five hundred volunteers over two weeks, once the reasoning is in place. The complexity of the data rises with the phases; the problem, two tonnes of abandoned technical clothing, stays the same.

Constructivist, experiential and situated learning. The framework for students is grounded in the view that learners construct knowledge by acting on realistic situations and reflecting on them (Kolb, 1984; Lave & Wenger, 1991; Vygotsky, 1978). The platform does not present sustainability or entrepreneurship as content to be memorised. Every scenario places the team at Agora Lake, before or after a sporting event that generates two tonnes of abandoned technical clothing, and asks it to decide as an entrepreneur would. The Design Thinking and Triple Bottom Line workshops that close the journey extend the same case into open-ended production, where there is no correct option to select.

Two further foundations named by the project, adaptive learning and remediation, are not separate theories so much as the operational form of the five families above. Adaptive systems that adjust the next step to the learner's response have been shown to approach the effectiveness of human one-to-one tutoring (VanLehn, 2011); remediation, in Bloom's (1968) sense of corrective procedures targeted at the specific gap, is what the guided activities provide.

2.3 How the foundations appear in the platform

Table 2.1 summarises the correspondence between principle and mechanism, so that the teacher can recognise the theory in what students see on screen. Chapter 6 describes each mechanism in operational detail.

Principle	What the platform does	Where the teacher sees it
Mastery and competence-based progression	Fifteen levels with explicit criteria; a level is left only through a correct answer, with a return to the main stage after the reinforcement route	Team log: score and category per area
Scaffolding within the zone of proximal development	Main stage, then alternative scenario, then guided activity, in increasing order of support	Not shown directly; inferred from the area score, which falls with each attempt
Formative feedback	A message for every option, explaining the reasoning behind right and wrong answers	Feedback texts read by students on screen
Cognitive load	Three levels of rising cognitive demand; support scenarios that narrow the task	Structure of each area: Initial, Intermediate, Advanced
Constructivist and situated learning	All scenarios set in the Agora Lake case; workshops produce an open-ended artefact	Design Thinking Canvas and TBL Canvas submitted by teams
Error-type diagnosis and remediation	Each wrong option is mapped to a named type of reasoning; a repeated type activates the matching guided activity	Pattern of errors across a team, discussed in chapter 10

Table 2.1. Correspondence between pedagogical principles and platform mechanisms.

2.4 The role of artificial intelligence in the model

Artificial intelligence was used during the development of the platform to generate the scenarios and to design the triggering of the guided activities and of the reinforced feedback on the basis of the learning theories documented above. In use, the platform is a rule-based adaptive system: each wrong option is associated with a named type of reasoning (for example, an exclusively economic focus, a single-stakeholder view, a traditional solution where an innovative one is required), the system recognises the type within two attempts, and it responds with the feedback and the guided activity assigned to that type. The platform does not learn from the students who use it, does not build a profile of the individual and does not alter its content over time. This is a deliberate choice: the behaviour of the system is fully known in advance, so that the teacher can anticipate it, explain it and, where appropriate, override it in the classroom.

2.5 What this means for the teacher

The platform adapts within the screen; the teacher adapts around it. The course syllabus for VET teachers produced by the project (SEISC, 2026) describes the adaptive teacher as one who applies different instructional strategies so that all learners can succeed, monitors continually and responds to what is observed; the European framework for the digital competence of educators places the same capacity under the heading of empowering learners through differentiation and personalisation (Redecker, 2017). The platform supplies the first half of this work by reacting to each answer; it cannot supply the second, because it does not know why a team has chosen as it did, what happened in the discussion before the choice, or how the error connects to what the class studied last week.

Three practical consequences follow and shape the rest of this guide. First, the scores in the team log are formative information before they are marks: a low score with few reinforcement steps and a low score with many tell different stories, and chapter 10 shows how to read them. Second, the reinforcement route is a source of teaching material rather than a penalty: a type of error that recurs across several teams identifies a misconception that deserves a classroom activity, and chapter 7 provides one for each area. Third, the

Apply phase, which the platform marks with a single confirmation, exists precisely because the theories above are not exhausted by an adaptive quiz: reflection on experience, transfer to the students' own discipline and social construction of understanding take place in the room, under the teacher's direction, before the teams return to the screen to create.

3. What the model develops: the sustainable entrepreneurial mindset

3.1 One mindset, two European frameworks

The competence that the Agora Lake journey sets out to develop is defined in the framework for students published by the SEISC project (Guraziu & Latorre, 2024). The framework brings together two reference frameworks of the European Commission's Joint Research Centre. EntreComp (Bacigalupo et al., 2016) describes entrepreneurship as acting upon opportunities and ideas and transforming them into value for others, where the value may be financial, cultural or social; it organises fifteen competences in three areas, Ideas and opportunities, Resources and Into action. GreenComp (Bianchi et al., 2022) describes a sustainability competence as one that enables learners to embody sustainability values, embrace complex systems and act to restore ecosystem health and enhance justice; it organises twelve competences in four areas, Embodying sustainability values, Embracing complexity in sustainability, Envisioning sustainable futures and Acting for sustainability.

The two frameworks were not placed side by side but merged. The project selected, from each, the competences that are attainable in vocational education, that offer a clear synergy between entrepreneurship and sustainability, and that a sustainable entrepreneur cannot do without. The result is a single mindset in which every entrepreneurial act is judged also by its environmental and social consequences, and every sustainability value is expected to become a decision, a product or a service rather than a declaration. The teacher will recognise this double reading in every scenario of the platform: the correct option is never the most profitable one alone, nor the most virtuous one alone, but the one that creates value for the enterprise, the community and the ecosystem at the same time.

3.2 The five competence areas

The mindset is articulated in five areas, which are also the five modules that teams meet in the Understand phase of the platform. Each area pairs one entrepreneurial component with one sustainability component, and unfolds across three levels named after the cognitive process they require. Table 3.1 lists the areas in the order in which they appear on the platform, with the title of each level as defined in the design of the corresponding module; Figure 3 presents the same structure graphically.

Area	Entrepreneurial component	Sustainability component	Initial (Understand)	Intermediate (Analyse)	Advanced (Create)
1. Design thinking and sustainability values	Design thinking as a method for framing problems and generating solutions	Embodying sustainability values	Sustainability fundamentals	Application of design thinking	Integrated solutions
2. Business model generation and embracing complexity	Business model generation	Embracing complexity in sustainability	Business model components	Circular economy and systems	Innovation and adaptive strategies
3. Into action and acting for sustainability	EntreComp area Into action	Acting for sustainability	Project management basics	Implementation and risk assessment	Leadership and impact measurement

Area	Entrepreneurial component	Sustainability component	Initial (Understand)	Intermediate (Analyse)	Advanced (Create)
4. Ideas and opportunities and envisioning sustainable futures	EntreComp area Ideas and opportunities	Envisioning sustainable futures	Opportunity recognition basics	Trend analysis and stakeholder engagement	Innovation design and vision development
5. Resources and sustainability complexity	EntreComp area Resources	Embracing complexity in sustainability, applied to material, energy and water resources	Resource recognition basics	Resource efficiency analysis	Circular economy implementation

Table 3.1. The five competence areas of the sustainable entrepreneurial mindset and their three levels. Source: Guraziu and Latorre (2024) and the design of the platform modules.

Area	Entrepreneurial component	Sustainability component	Initial (Understand)	Intermediate (Analyse)	Advanced (Create)
1 Design thinking and sustainability values	Design thinking method	Embodying sustainability values	Sustainability fundamentals	Application of design thinking	Integrated solutions
2 Business model generation and embracing complexity	Business model generation	Embracing complexity	Business model components	Circular economy and systems	Innovation and adaptive strategies
3 Into action and acting for sustainability	EntreComp: Into action	Acting for sustainability	Project management basics	Implementation and risk assessment	Leadership and impact measurement
4 Ideas and opportunities and envisioning sustainable futures	EntreComp: Ideas and opportunities	Envisioning sustainable futures	Opportunity recognition basics	Trend analysis and stakeholder engagement	Innovation design and vision development
5 Resources and sustainability complexity	EntreComp: Resources	Embracing complexity: resources	Resource recognition basics	Resource efficiency analysis	Circular economy implementation

Figure 3. The five competence areas, their entrepreneurial and sustainability components and the three levels of each.

The order is not arbitrary. Area 1 establishes the values and the method; areas 2 and 5 develop the two forms of systemic thinking that sustainable business requires, one about the business model and one about resources; areas 3 and 4 concern action and imagination, which entrepreneurship needs in equal measure. The two workshops that close the journey return to areas 1 and 2 in open-ended form: the Design Thinking Canvas asks teams to apply the method of area 1 to a real product, and the Triple Bottom Line Canvas asks them to build the business model of area 2 for the same product, with its economic, social and environmental dimensions made explicit.

3.3 What a level means

For every level of every area the framework defines three learning outcomes, in the form used by the European Qualifications Framework: what the student should know, what the student should be able to do, and how the student should be able to apply knowledge and skills with autonomy and responsibility (Council of the European Union, 2017). The verbs of these outcomes follow the revised Bloom taxonomy (Anderson & Krathwohl, 2001): at the Initial level the student understands, identifies and imagines; at the Intermediate level analyses, compares and evaluates; at the Advanced level generates, designs and creates.

Area 4 shows how the two frameworks combine within a single progression. At the Initial level the student understands the concept of sustainable innovation and opportunity recognition, identifies potential sustainable business opportunities in familiar contexts and imagines simple scenarios for a more sustainable future. At the Intermediate level the student analyses trends in sustainable innovation and market demand, conducts a basic needs analysis with relevant stakeholders and evaluates and compares different sustainable future scenarios. At the Advanced level the student designs innovative solutions for sustainable products, generates and validates ideas for them and creates detailed, actionable visions of sustainable futures with strategies to achieve them. The EntreComp competence of spotting opportunities and the GreenComp competence of envisioning sustainable futures are present at each level, at a rising degree of autonomy and complexity.

The platform translates each outcome into observable behaviour. For every level, the design of the module states the criteria by which competence is considered demonstrated and the criteria by which reinforcement is considered necessary; the response options of each scenario are written so that the correct option meets the first set and each wrong option matches one of the second, with a named type of reasoning behind it. When a team passes a level, it has therefore met at least one demonstrated-competence criterion in a realistic decision; when a team is routed to a guided activity, it has shown one specific need for reinforcement. This is why the score of an area, read together with the route taken to obtain it, tells the teacher which outcome of the framework has been reached and which has not, a reading developed in chapter 10.

3.4 The teacher's own competences

The framework for students has a counterpart for teachers. The course produced by the project for VET teachers (SEISC, 2026) describes the sustainable adaptive teacher through the same two frameworks and a third, the European framework for the digital competence of educators (Redecker, 2017). DigCompEdu is relevant here in two of its areas. Under Teaching and learning, it expects the educator to use digital tools to guide and support learners and to foster collaboration; under Empowering learners, it expects the educator to use digital technologies to address learners' diverse needs, to differentiate and to personalise. The Agora Lake platform is a digital tool of exactly this kind, and this guide can be read as a route through those competences: chapters 5 and 6 concern guidance and monitoring, chapter 7 concerns differentiation in the classroom, and chapters 8 to 10 concern collaboration, assessment and feedback.

No prior competence in entrepreneurship, sustainability science or educational technology is assumed. What the guide assumes is the disposition described in the teacher framework: to observe what students do, to respond to it, and to treat the platform as an instrument of that response rather than as a substitute for it.

4. The learning journey: three phases and a session plan

4.1 Understand, Apply, Create

The journey is inductive: teams first meet the case and take decisions in it, then step back to make sense of what they have done, and only then build something of their own. The three phases are not three modules that can be reordered; each produces what the next one needs.

In the Understand phase teams work through the five adaptive areas described in chapter 3, in a fixed order, each across three levels. The phase yields, for every team, a score and a category per area and a total score for the journey, and, for the teacher, a first picture of where each team reasons well and where it falls back

on economic, superficial or single-stakeholder thinking. The phase is entirely on the platform and is self-paced within the periods the teacher allots.

In the Apply phase the class leaves the screen. On the platform this phase is represented by a single checkpoint that the team confirms before the workshops open; what fills it is the teacher's classroom activity. Chapter 7 proposes one activity per area, each built on the type of error that the area is designed to detect, so that the phase turns the results of the Understand phase into discussion, transfer to the students' own discipline and reflection. The phase yields, for the team, a shared understanding of why the decisions in the simulation were right or wrong, and, for the teacher, evidence of learning that the platform cannot record.

In the Create phase teams return to the platform for two ninety-minute workshops on the EcoTrack Solutions case, each with teams of three to five students and a score out of one hundred. In the first they apply Design Thinking to one of five products, working through six phases with a written deliverable for each; in the second they build a Triple Bottom Line business model for the same product, in ten blocks. The teacher evaluates both inside the platform, and the second workshop opens only when all six phases of the first have been evaluated. The phase yields two artefacts per team, two scores with written feedback and a final category.

4.2 A session plan for one class

Table 4.1 sets out a plan of eight sessions for a class working in periods of fifty to sixty minutes. It assumes that each team has one device, that the teacher has created the class and the teams beforehand (chapter 5), and that the two workshops are run as double periods. Sessions 2 and 3 can be merged into one for a fast class or extended to three for a class that needs the reinforcement route often; session 5 can be omitted where the Apply activities are absorbed into another subject's timetable. The range of seven to nine periods given in chapter 1 covers these variations. Figure 4 places the same sessions on a timeline, with the two evaluation intervals that fall outside the classroom.

Session	Phase	Activity	Teacher's task	Reference
1	Understand	Introduction to the case, the platform and the teams; area 1	Present the journey; hand out credentials; observe the first reinforcement routes	Chapters 5 and 6
2	Understand	Areas 2 and 3	Monitor progress from the class list; note recurring error types	Chapter 6
3	Understand	Areas 4 and 5; final score	Read the team logs; choose the Apply activities for this class	Chapters 6 and 10
4	Apply	Classroom activities for the areas where the class was weakest	Facilitate; record observations; connect to the subject curriculum	Chapter 7
5	Apply	Remaining activities and reflection; teams confirm the checkpoint	Facilitate; close the phase	Chapter 7
6 (double)	Create	Design Thinking workshop	Facilitate according to the instructor manual; then evaluate the six phases on the platform before session 7	Chapter 8
7 (double)	Create	Triple Bottom Line workshop	Facilitate according to the instructor manual; then evaluate the ten blocks on the platform	Chapter 9
8	Close	Feedback and reflection on the whole journey	Return scores and written feedback; discuss the two artefacts; collect the students' view of the experience	Chapter 10

Table 4.1. Session plan for a complete cycle, eight sessions of fifty to sixty minutes, of which two are double periods.

Two intervals in the plan take place outside the classroom and must be scheduled. Between sessions 3 and 4 the teacher reads the team logs and decides which Apply activities the class needs; between sessions 6 and

7 the teacher evaluates the six Design Thinking phases of every team, because no team can start the second workshop until its first has been fully evaluated. Each evaluation requires a mark and a written comment per phase, and the time needed grows with the number of teams; for a class of six teams, an hour is a reasonable allowance.

Eight sessions of fifty to sixty minutes; the two dashed boxes are the teacher's work outside the classroom



Figure 4. Timeline of the eight sessions, with the reading of the team logs between sessions 3 and 4 and the evaluation of the Design Thinking phases between sessions 6 and 7.

4.3 Adapting the plan

The plan can be adapted along three axes without breaking the sequence. In time, the Understand phase can be assigned partly as homework, since teams can log in from any device with their credentials, provided that at least the first area is done in class so that the teacher sees how the platform reacts to error. In grouping, teams of three to five students work best for the workshops; for the Understand phase, pairs are acceptable if devices are scarce, but the same team must then be kept for the whole journey, because the platform records progress by team. In depth, a class with a strong background in business studies can shorten the Apply phase to one session and use the second workshop to go further into the financial blocks of the canvas; a class new to the subject should keep both Apply sessions and treat the workshops as guided.

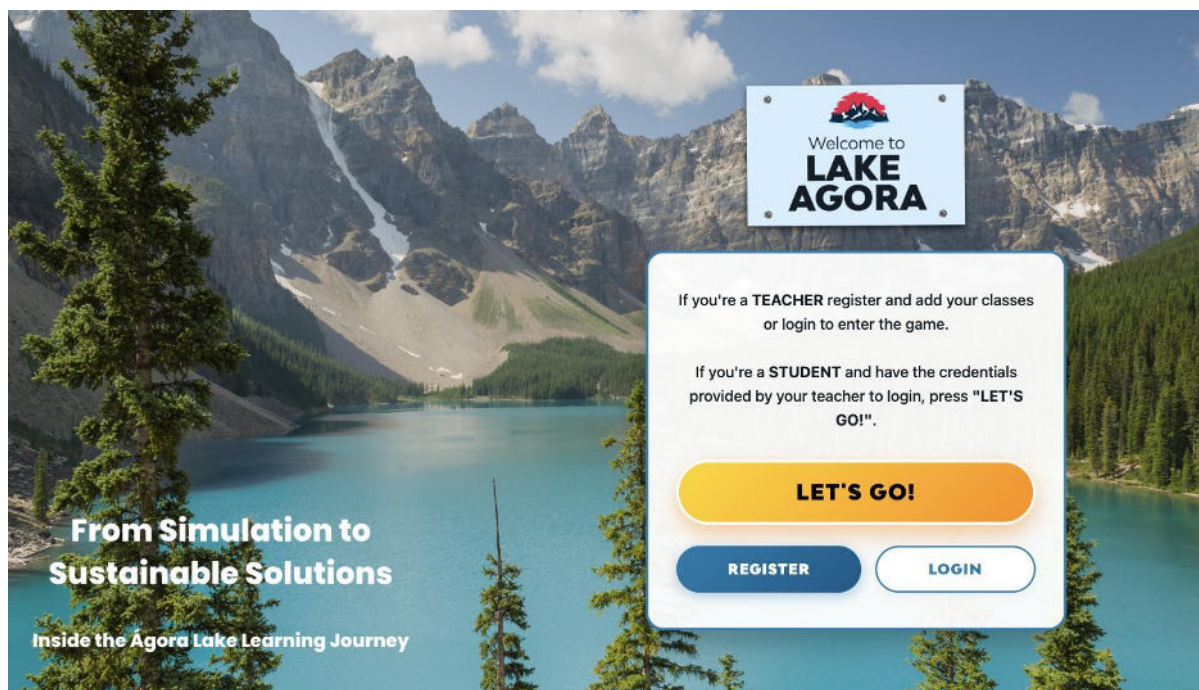
What cannot be adapted is the order of the phases and the teacher's evaluation in the Create phase. Teams cannot enter the workshops before completing the five areas and confirming the checkpoint, and cannot complete the journey until the teacher has evaluated both artefacts. These constraints are the platform's way of keeping the inductive logic intact, and the session plan is built around them.

5. The platform for the teacher: access, classes and teams

5.1 Access and registration

The Agora Lake platform is reached at games.seisc.eu from any current browser; nothing is installed and the interface is in English. The entrance page offers two separate doors, one for teachers and one for teams, and the two must not be confused: a teacher account creates and follows classes, a team account plays the journey, and neither can do the other's work (Figure 5).

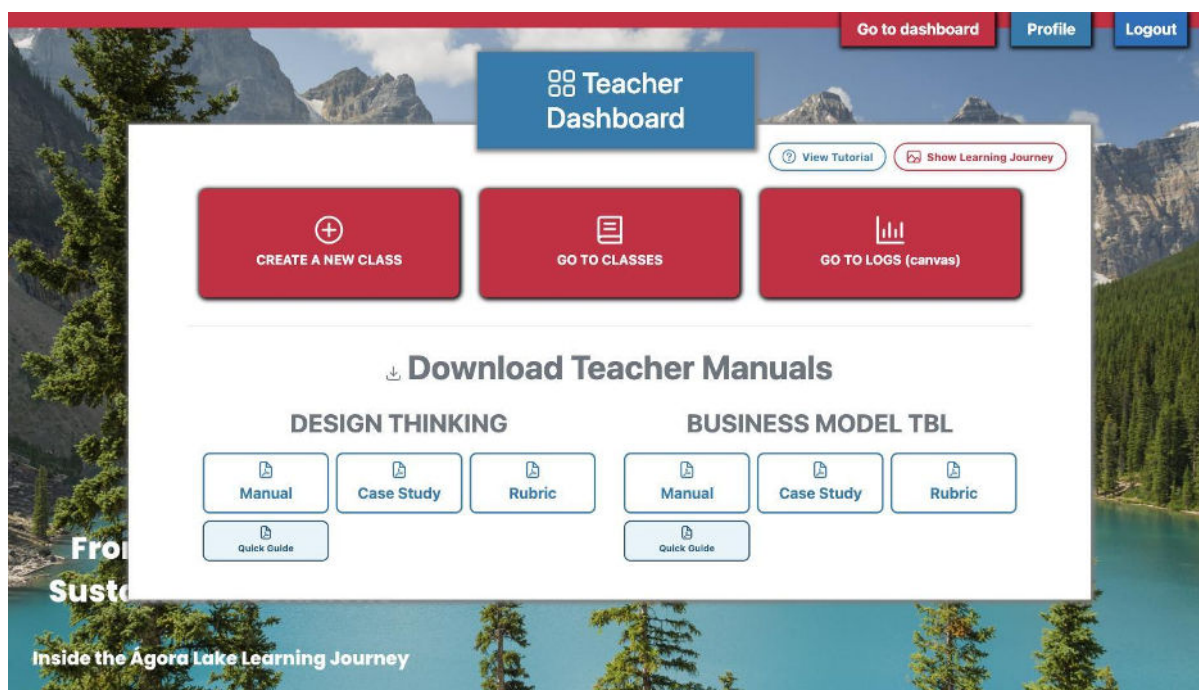
A teacher registers once, from the teacher door, with an e-mail address and a password of their own choosing. There is no approval step: the account is active immediately and the same credentials are used at every later login. Students never register. Their credentials are generated by the platform when the teacher creates the class, as described in section 5.3, and the teacher distributes them.



Screenshot 5.1. The two entrances of the platform, for teachers and for teams. Captured on 8 September 2026.

5.2 The teacher dashboard

After login the teacher lands on a dashboard with three parts. The first is a tutorial in six steps that walks through the teacher's route from creating a class to evaluating the workshops; it can be reopened at any time and is a convenient way to show a colleague the platform in a few minutes. The second is an overview image of the learning journey. The third is a set of documents for download, which the teacher should collect before the first session: for the Design Thinking workshop, the instructor manual, the quick guide, the EcoTrack case and the evaluation rubric; for the Triple Bottom Line workshop, the equivalent four documents. The two instructor manuals contain the minute-by-minute facilitation of the workshops and are referred to throughout chapters 8 and 9. The two quick guides are earlier summaries and, where they differ from the manuals or from the platform on points and thresholds, the platform and the manuals prevail.



Screenshot 5.2. The teacher dashboard after login. Captured on 8 September 2026.

5.3 Creating a class and its teams

A class is created from the dashboard in a single form with three fields: the name of the class, the section, and the number of teams. On confirmation the platform generates one username and one password for each team. The credentials are random strings, not names, and they cannot be edited. This is a deliberate choice made to protect the privacy of students in accordance with the General Data Protection Regulation (Regulation (EU) 2016/679): the platform stores no name, e-mail address or other personal data of any student, and identifies a team only by its credentials and its number within the class. The correspondence between students and usernames exists only in the teacher's own records, which should therefore be kept from the moment of distribution.

The credentials reach the teams in one of two ways. The teacher can print or copy them from the class list and hand them out at the start of the first session, or can send them from the platform itself by e-mail, entering the addresses of the students of each team; in the second case the addresses are used for the sending and are not attached to the team's record.

Three points of practice follow from the way the class is built. First, teams can be added to a class at any time and deleted from the class list at any time, so a class can grow with late arrivals or be reused across cycles by removing the teams that have finished; deletion is immediate and removes the team's whole record, including evaluated workshops, so it should be preceded by the export described below. Second, all the students of a team share a single login and a single record of progress; if the same team must work on two devices at once, the second device only reads what the first has done, and the workshops in particular should be run on one device per team. Third, the team's name on the platform is its number within the class: teams should be told their number as well as their username, because the teacher's views refer to them by number.

For the session plan of chapter 4, the class and its teams should be created before session 1 and the credentials distributed, by slip or by e-mail, so that each team can log in at the start of the session.

The screenshot shows a web interface for creating a class. At the top right, there are links for 'Go to dashboard', 'Profile', and 'Logout'. The main heading is 'Insert the information to proceed with the creation of the students' login.' Below this is a form with three input fields: 'CLASS' (with a placeholder 'Class grade'), 'SECTION' (with a placeholder 'Class section'), and 'NUMBER OF TEAMS' (with a placeholder '0' and increment/decrement buttons). A red button labeled 'SAVE CLASSES & GENERATE TEAM CREDENTIALS' is at the bottom of the form. The background is a scenic image of a lake and mountains. A banner at the bottom reads 'From Simulation to Sustainable Solutions Inside the Agora Lake Learning Journey'.

Screenshot 5.3. The class creation form, with the fields for class, section and number of teams. Captured on 8 September 2026.

5.4 Following progress: the class list

The class list is the teacher's working screen during the Understand phase. For each class it shows every team with its username and password, its progress along the journey, and the actions available: opening the team

log, deleting the team, and exporting the class to an Excel file. The export contains the credentials and the progress of all teams and is the record to keep at the end of a cycle; it also allows the teacher to prepare the credential slips for session 1 without copying by hand.

During a session the class list answers the questions the teacher most needs to answer quickly: which teams have finished the current area, which are still on it, and whether any team has stalled. It does not show why a team is slow; for that the teacher opens the team log. Refreshing the page updates the progress of the teams.

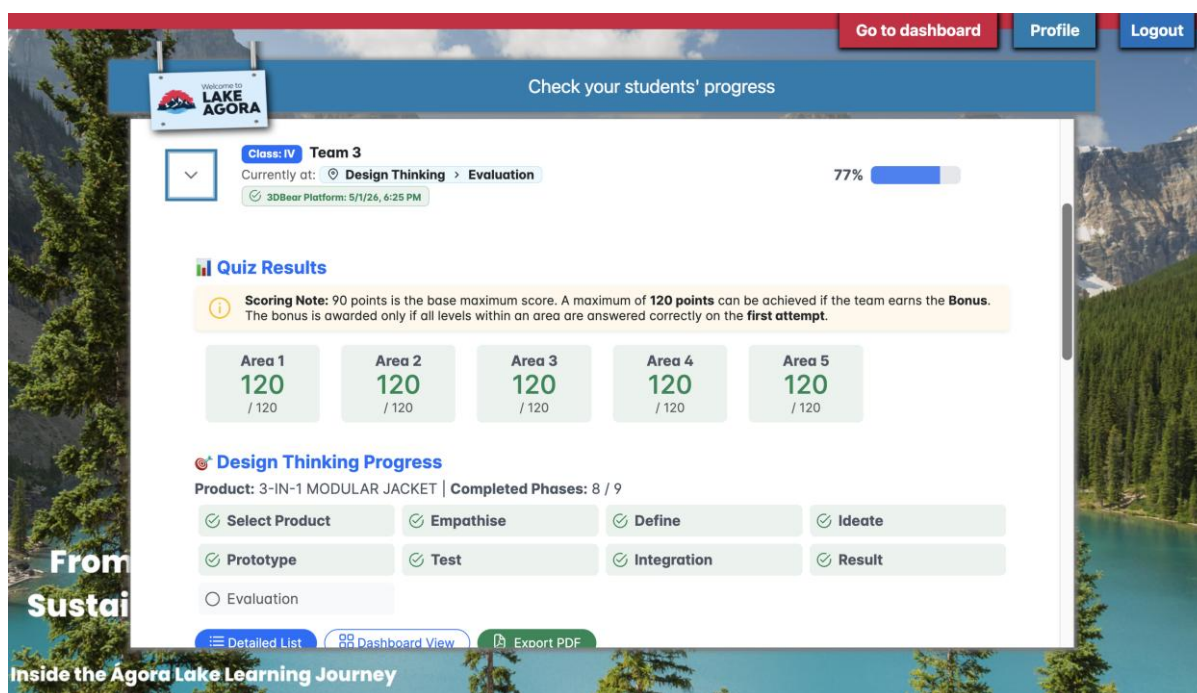
Class	Team	Username	Password	Progress	Actions
IV	Team 1	1om9egyh		Business Canvas > Grade Review	[Email] [Delete]
IV	Team 2	aet7bnjt		AREA 2: Business Model Generation & Embracing Complexity > Initial Level > MainStage	[Email] [Delete]
IV	Team 3	bbn2dapj		Design Thinking > Evaluation	[Email] [Delete]
V	Team 1	7rd4zg20		Business Canvas > Graduated	[Email] [Delete]
V	Team 2	mogkwtnj		Instructions > Canvas	[Email] [Delete]
I	Team 1	b1udldmu		Business Canvas > Graduated	[Email] [Delete]

Screenshot 5.4. The class list of a class with its teams. Captured on 8 September 2026.

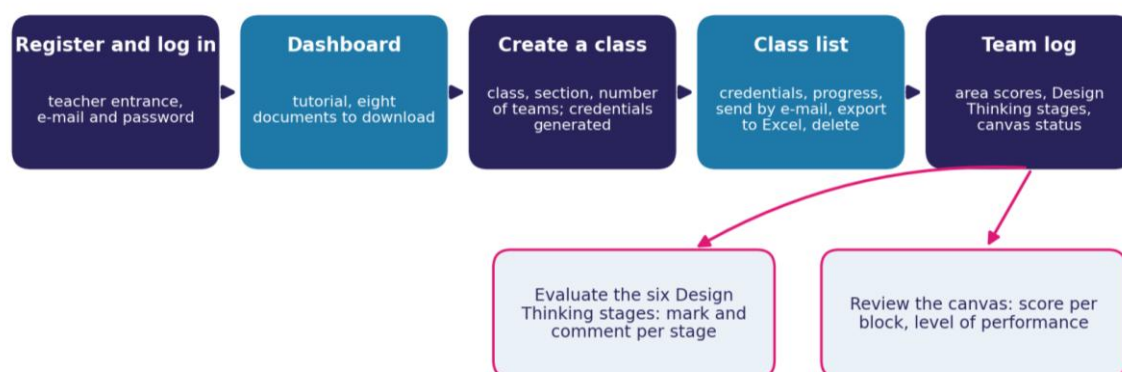
5.5 The team log

The team log is the platform's detailed record of one team and the screen through which every evaluation is made. It opens from the class list and has three sections, corresponding to the three moments in which the teacher reads or acts on the team's work.

The first section shows the score of each of the five areas, out of one hundred and twenty; the total out of six hundred and the categories are shown to the team on its own result screens. This is the reading discussed in chapter 10: the score of an area falls with each reinforcement step, so that the number tells not only whether the team reached the correct reasoning but roughly how much support it needed on the way. The second section shows the state of the Design Thinking workshop, from the selection of the product through the six phases to the result and the evaluation; for each phase the teacher can read the team's submitted text, enter a mark and write a feedback message, in a detailed list or in a dashboard view, and the log can be exported to PDF. The third section shows the Triple Bottom Line canvas, block by block, with a score for each block and the resulting level of performance. The evaluation procedures themselves are set out in chapters 8 and 9; what matters here is that both evaluations take place in this log, that a team cannot advance to the second workshop until all six phases of the first have been marked, and that a team cannot complete the journey until the canvas has been reviewed.



Screenshot 5.5. The team log, with the area scores and the state of the two workshops. Captured on 8 September 2026.



Dashed red: the two evaluations, both made from the team log

Figure 5. The teacher's route through the platform: registration and login, dashboard and downloads, class creation, class list, team log and the two evaluations.

5.6 Before the first session

The start-up checklist in Annex C gathers the steps of this chapter in the order in which they are taken: register, download the eight documents, create the class and its teams, export the class list, distribute the credentials by slip or by e-mail, and open one team log to become familiar with the screen on which the evaluations will be made. A teacher who wishes to see the student side before the class does can add a trial team, log in with its credentials and play the first area; the trial team can then be deleted from the class list. Chapter 6 describes what students see from that point on.

6. The platform for the team: scenarios, feedback, branching and scores

6.1 What the team sees

A team logs in from the team entrance with the username and password received from the teacher and lands on an instructions page. The page explains, in a few lines, the structure of an area in three levels, the rule of progression (a correct answer at the main stage advances the team, a wrong answer leads to an alternative

stage, a repeated type of error leads to a guided activity), the points for each level and the four categories that close an area. The team presses Start Game and enters area 1 at its Initial level. From that moment until the end of area 5 the sequence is fixed: the five areas of chapter 3 follow one another in order, each area from Initial to Intermediate to Advanced, and the team cannot skip, return or choose. At the end of each area the team sees its score and category for that area and continues; at the end of the fifth it sees the cumulative score and category for the whole Understand phase, after which the checkpoint of the Apply phase and the two workshops of the Create phase follow (Figure 8). During play the team does not see a running score: the feedback on a correct answer states the points earned, the feedback on a wrong answer does not state the points it costs, and the score of the area appears only on its result screen. The teacher does not need to be present for any of this, but the first area is best played in class, where the teacher can watch how teams react to their first wrong answer.

Area structure: The Area 1 game (*Design Thinking & Sustainability Values*) has 3 levels:

- Initial
- Intermediate
- Advanced

How you progress: At each level you'll see a **main stage** with 3 alternatives. If you answer correctly, you advance to the next level. If you fail, you move to an **alternative stage**. If you repeat the same type of error, you'll do a **guided activity** with reinforcement feedback.

Scoring:

- Main stages: **+20 pts.** (Initial), **+30 pts.** (Intermediate), **+40 pts.** (Advanced). Incorrect answers deduct **-5 / -8 / -10 pts.**
- Alternative stages grant partial points: **+15 / +20 / +25 pts.** Incorrect answers deduct **-3 / -5 / -8 pts.**
- Guided activities: Formative support (**0 pts.**, no penalty).
- Non-negative floor: score cannot drop below 0 at any step.
- Maximum area score: **90 pts. base + 30 pts. bonus** (the bonus is awarded only if all levels are solved on the first attempt).

Your final category (Area score over 120):

- 🏆 Sustainability Expert (100–120 pts),
- 🥈 Advanced Practitioner (75–99 pts),
- 🥉 Competent Learner (48–74 pts),
- 📖 Beginner (<48 pts).

Screenshot 6.1. The levels of an area and the rules of progression, scoring and categories on the instructions page seen by a team after login. Captured on 29 September 2026.

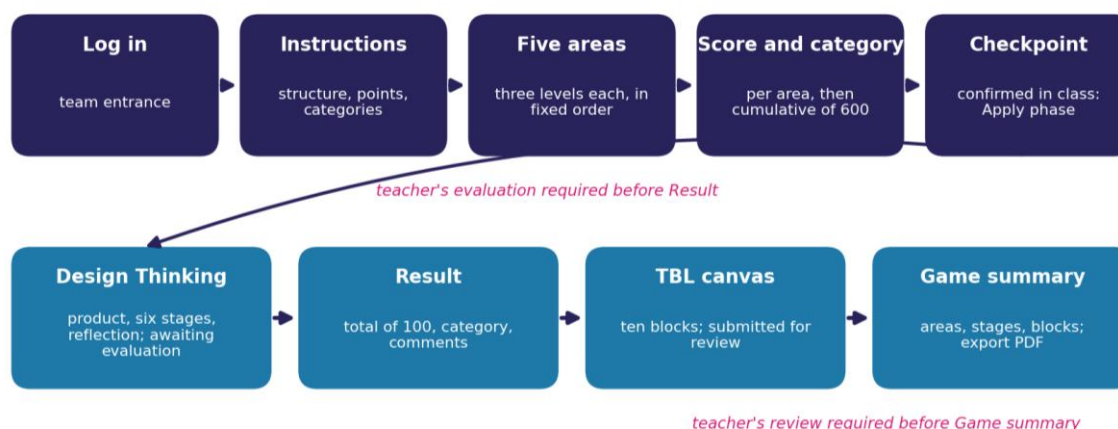


Figure 8. The team's route through the platform: login, instructions, five areas of three levels each, score and category per area, cumulative score, checkpoint, Design Thinking workshop, Triple Bottom Line workshop.

Every screen of the five areas has the same shape: a short context set at Agora Lake, one question, three options of comparable length, a button to review the response. After the response the screen shows whether it was correct, a feedback message written for the option chosen and a button to go on. Students read, discuss, choose and read again; nothing is typed until the workshops.

6.2 How an area is built

Each of the five areas was designed by the project as a self-contained adaptive module, and all five follow the same architecture. The unit of design is the level. For each of the three levels the design first states the competence criteria: four or five behaviours by which competence is considered demonstrated, and three to six by which reinforcement is considered necessary. For area 1 at the Initial level, for example, competence is demonstrated when the student identifies environmental problems rather than only economic or aesthetic ones, recognises the impact of human activity on the environment, understands the basic concept of sustainability and connects human actions with environmental consequences; reinforcement is needed when the student focuses only on economic or aesthetic aspects, does not recognise obvious environmental problems or confuses sustainability with profit. A team leaves a level when it has met the transition criterion stated for that level; a team is routed to reinforcement when its answer matches a need-for-reinforcement criterion.

On these criteria the design then builds, for each level, three scenarios and two guided activities. The main scenario is the question every team meets; the two alternative scenarios are met only by teams that answer wrongly, and each is more concrete and more closely anchored to the case than the one before. Every scenario has three options. One meets a demonstrated-competence criterion; each of the other two matches a need-for-reinforcement criterion and is labelled, in the design, with a named type of error. An area therefore contains nine scenarios, twenty-seven options and six guided activities, and the five areas together contain forty-five scenarios and thirty guided activities, all set in the same case, the technical clothing abandoned at Agora Lake after the championships. The Understand phase works deliberately on a reduced version of the event, so that the arithmetic of the scenarios stays within reach while teams are learning the reasoning: five hundred athletes and two thousand sports tourists, two garments each, five thousand garments sold, four thousand abandoned, two tonnes of textile waste. The videos, the Apply activities and the two workshops then move to the full EcoTrack case, four thousand athletes, ten thousand sports tourists and five hundred volunteers over two weeks, with the same two tonnes of waste; the complexity of the data grows with the phases, the problem stays the same.

Table 6.1 shows the construction at work on the Initial level of area 1. The three scenarios ask the same thing in three different ways, from the general to the particular: what problem a sustainable entrepreneur sees, what the main impact of three hundred kilograms of abandoned clothing is, and how to judge a company that proposes to collect and resell the clothing for profit. In each, the wrong options are the same two ways of reasoning, an exclusively economic focus and a focus on image or marketing, so that a team that chooses them twice reveals not a lapse but a pattern.

Scenario	Context	Question	Correct option meets	Wrong options match
Main	Preparations for the championships; participants carry technical kit they will use for a week and abandon	What priority problem do you identify?	Identifies environmental problems	Economic focus (athletes overspend); aesthetic focus (brands neglect marketing)
Alternative 1	Staff collect 300 kg of abandoned technical clothing from camps and hotels	What is the main impact?	Recognises the impact of human activity on the environment	Economic focus (cleaning costs); aesthetic focus (tourist image)

Scenario	Context	Question	Correct option meets	Wrong options match
Alternative 2	A local company proposes to collect the clothing and resell it online for profit	From a sustainability perspective, this solution is?	Understands sustainability and connects actions with consequences (partially good, does not address the root cause)	Confuses sustainability with profit (perfect, waste into profit); economic focus (irrelevant, profit only)

Table 6.1. The three scenarios of the Initial level of area 1 and the criteria behind their options. Source: design of the area 1 module.

6.3 Types of error and the two levels of feedback

The named types of error are the hinge of the model. Each area defines its own set, drawn from the ways in which students most often reason wrongly about that competence: area 1 uses seven (economic focus, superficial solutions, lack of innovation, aesthetic focus, single stakeholder, traditional thinking, incomplete integration); area 2 uses eight, among them single-dimension focus, linear thinking, stakeholder neglect and traditional models; areas 3, 4 and 5, whose scenarios are more varied, use a larger vocabulary, with types such as action without planning, risk avoidance, incremental mindset, greenwashing, false economy or partial circularity. Annex D lists the types of each area next to its scenarios. What matters for the teacher is not the vocabulary but the principle: the platform does not record that a team was wrong, it records how the team was wrong, and it responds to the how.

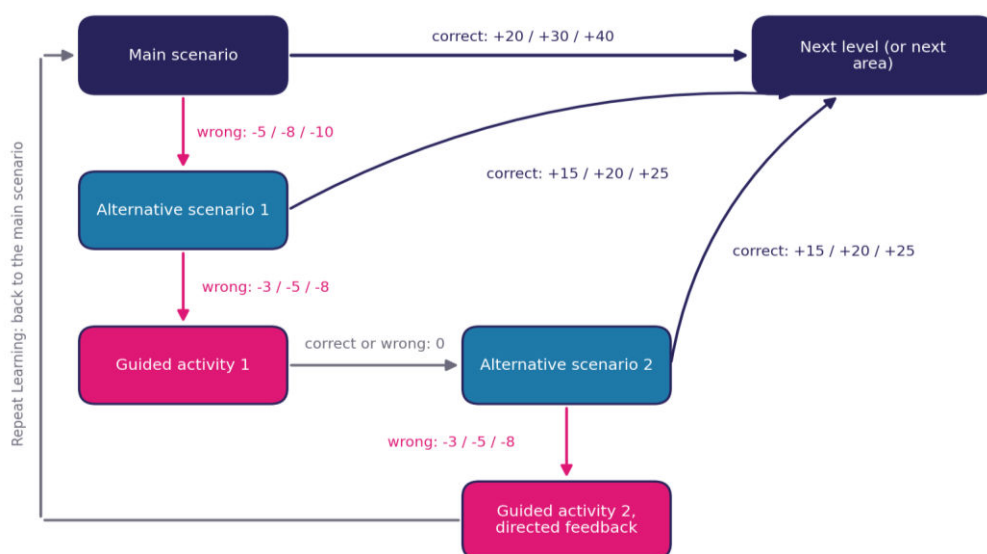
Feedback operates at two levels. At the first level, every option of every scenario carries its own message. A correct option is followed by an explanation of why it is correct, anchored in the case and closed by the points earned, for example that two thousand five hundred people abandoning equipment generate two tonnes of textile waste and that recognising this is the core of a sustainable vision. A wrong option is followed by an explanation of what the choice overlooked and by a question that points towards the alternative scenario, for example that sustainability goes beyond economics and that the team should think of the environmental impact of clothing left in a natural area. This first-level feedback is specific, non-evaluative and immediate, in the sense of chapter 2.

At the second level, when a team commits the same type of error twice within a level, the design provides a reinforced feedback message written for that type and that level, which names the pattern explicitly (that the team is still reasoning solely in economic terms, or still limiting its view to a single stakeholder) and announces the guided activity that follows. Each type of error at each level is mapped to one of the two guided activities of the level; the mapping is fixed, so that a team that keeps reducing complex decisions to economic terms at the Advanced level of area 1, for instance, is always sent to the activity on the development of an ethical framework. On the platform the message shown at the second error is the option-level feedback of the alternative scenario, not a distinct reinforced message; the explicit naming of the repeated pattern is therefore taken up by the teacher in the Apply phase, where chapter 7 shows how the class identifies and names the type of reasoning to be corrected.

The guided activities are the reinforcement itself. Each presents a case study with concrete figures (the numbers of the event, the cascade of effects of a single abandoned shirt, the dilemmas of an entrepreneur offered an investment with unacceptable conditions), followed by one question with three options. The feedback here is more didactic than in the scenarios: a wrong answer receives an explanation that isolates the missing piece of reasoning and invites the team to look again, a correct answer receives confirmation of the reasoning and of why it matters. The design states the principle plainly: guided activities are the crucial moments of reinforcement and therefore require even more specific and educational feedback than the scenarios.

6.4 The branching flow

Figure 6 shows the complete route through one level, which is identical for every level of every area. The team answers the main scenario. If correct, it moves to the next level (or, from the Advanced level, to the next area). If wrong, it receives the first-level feedback and moves to alternative scenario 1. If correct there, it moves on. If wrong again, it enters guided activity 1, chosen by the type of error. From the guided activity the team moves, whether its answer was correct or not, to alternative scenario 2. If correct there, it moves on. If wrong, it enters guided activity 2, receives directed feedback that points back to the missing piece of reasoning and, whether its answer there is correct or not, returns to the main scenario of the same level, a step the design calls Repeat Learning. A level can therefore be left only through a correct answer at the main scenario, at alternative scenario 1 or at alternative scenario 2; there is no limit to the number of times the loop can be run, and no team is ever advanced by exhaustion.



Points shown as Initial / Intermediate / Advanced. Source: design of the area modules

Figure 6. The branching flow of one level, with the points attached to each step. Source: design of the area modules, section on the complete branching flow.

Two consequences follow for the teacher. First, the route is diagnostic: a team that reaches the next level from the main scenario, from alternative scenario 1 or from alternative scenario 2 has shown three different amounts of need for support, and the score of the area, explained next, encodes this. Second, the route is bounded: because every wrong option belongs to a named type, and because the guided activity is chosen by the type, two teams that make the same mistake receive the same reinforcement. What they do not receive is the discussion, the transfer to their own subject and the reflection that chapter 7 provides in the classroom.

6.5 The scoring system

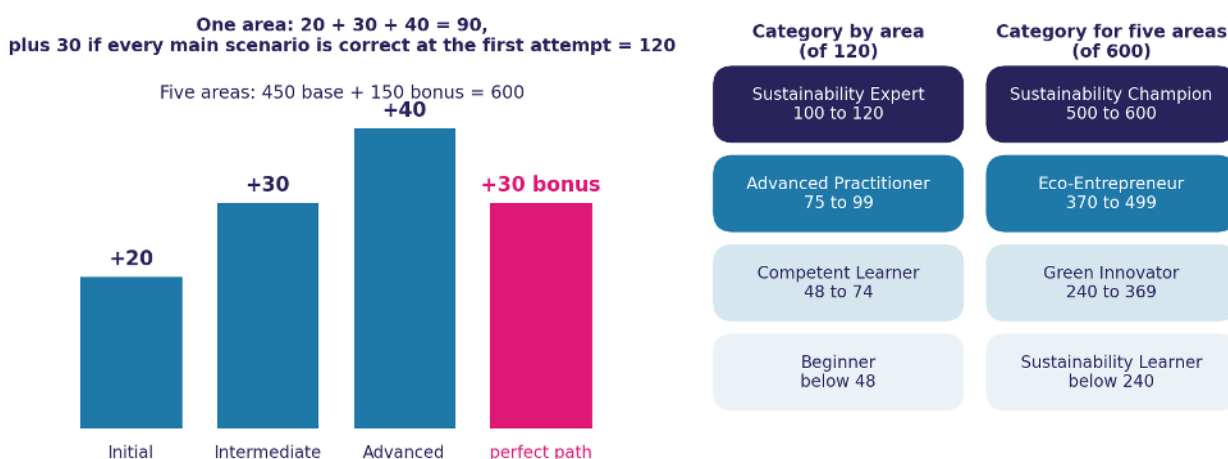
Points are earned by correct answers and lost by wrong ones, and the score of an area can never fall below zero. The values rise with the level, so that a correct answer at the Advanced level is worth twice one at the Initial level and a mistake at the Advanced level costs twice as much. Guided activities are reinforcement, not assessment. Table 6.2 gives the values, which are the same in all five areas (Figure 7).

Step	Initial level	Intermediate level	Advanced level
Main scenario, correct	+20	+30	+40
Main scenario, wrong	-5	-8	-10

Step	Initial level	Intermediate level	Advanced level
Alternative scenario, correct	+15	+20	+25
Alternative scenario, wrong	-3	-5	-8
Guided activity, correct or wrong	0	0	0
Maximum for the level	20	30	40

Table 6.2. Points by step and level, identical in the five areas. Source: design of the area modules, section on the scoring system.

The base maximum of an area is ninety points, obtained by answering the three main scenarios correctly at the first attempt. To this the platform adds a bonus of thirty points, the perfect path bonus, for a maximum of one hundred and twenty. The bonus is awarded only when the area is completed with exactly three answers, all three on the main scenarios and all three correct: a single wrong answer, or any visit to an alternative scenario or a guided activity, excludes it, and a main scenario answered correctly after a return through Repeat Learning earns its points but does not restore the bonus. A team that has needed any reinforcement step therefore scores at most ninety. The bonus marks the teams that reasoned correctly from the outset, and the distance below ninety marks how much support the others needed.



Wrong answers subtract points (see Table 6.2); the score of an area never falls below zero

Figure 7. The scoring system: points by level, perfect path bonus, maximum per area and cumulative maximum, with the category thresholds.

Over the five areas the base maximum is four hundred and fifty points and the bonus maximum one hundred and fifty, for a cumulative maximum of six hundred, which is the figure the team sees at the end of the Understand phase. Because the score cannot fall below zero, a wrong answer given while the score of the area is still at zero costs nothing: the first errors of an area, made before any point has been earned, leave no trace in the score. Two teams with the same score may therefore have made a different number of errors, which is one more reason to read the score together with the route, as chapter 10 explains.

6.6 Final categories by area and for the five areas

At the end of each area the team's score is translated into one of four categories, each with a short message addressed to the team; at the end of the fifth area the cumulative score is translated into one of four further categories, with different names, for the whole phase. Tables 6.3 and 6.4 give the thresholds, in points and as a percentage of the maximum. The categories are the language in which students remember their result, and the teacher should use the same names when returning feedback in session 8.

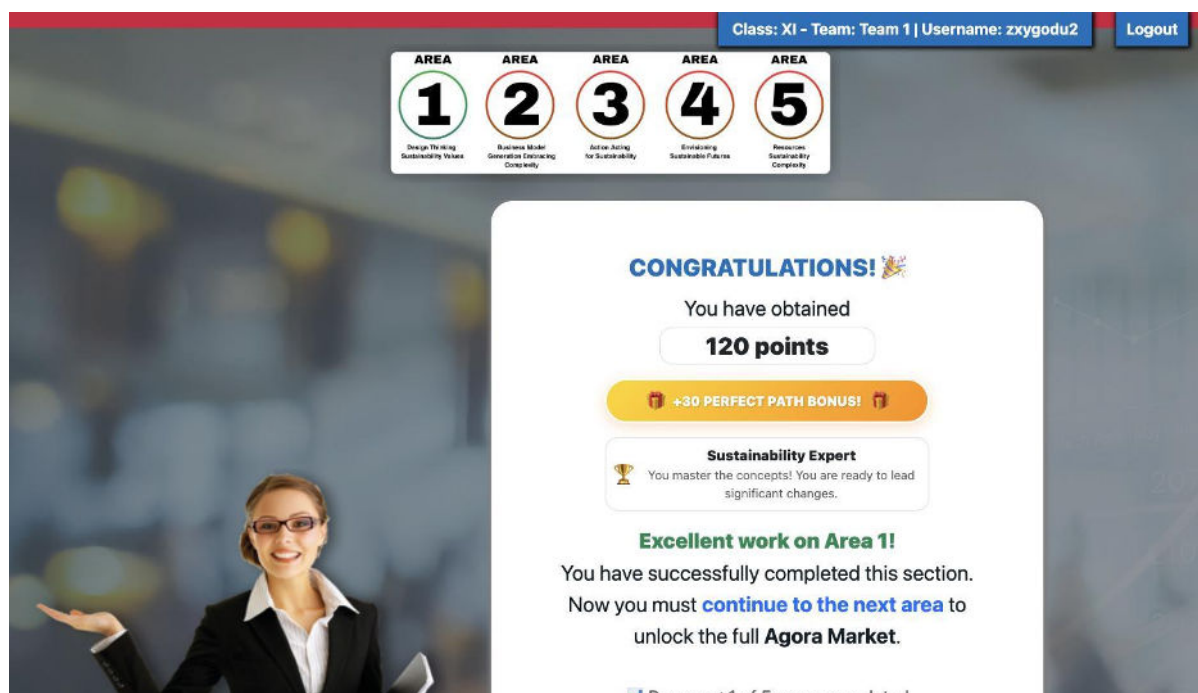
Category by area	Points (of a maximum of 120)	Share of maximum	Message to the team
Sustainability Expert	100 to 120	83 to 100 per cent	You have mastered sustainability concepts; your deep understanding prepares you to lead meaningful change
Advanced Practitioner	75 to 99	62 to 82 per cent	You demonstrate solid skills; with a little more practice you will be an expert
Competent Learner	48 to 74	40 to 61 per cent	You are on the right track; continue exploring to strengthen your understanding
Beginner	below 48	below 40 per cent	You have taken the first important step; keep practising to improve

Table 6.3. Final categories by area. Source: design of the area modules.

Category for the five areas	Points (of 600)	Share of maximum	Message to the team
Sustainability Champion	500 to 600	84 to 100 per cent	You have mastered sustainability concepts; your deep understanding prepares you to lead meaningful change
Eco-Entrepreneur	370 to 499	62 to 83 per cent	Excellent performance; you have the skills to create successful sustainable ventures
Green Innovator	240 to 369	40 to 61 per cent	Good progress; continue developing your skills to reach your full potential
Sustainability Learner	below 240	below 40 per cent	You are on the right track; every step counts on your journey towards sustainability

Table 6.4. Final categories for the cumulative score of the five areas. Source: design of the area modules.

The thresholds by area are set on the maximum of one hundred and twenty, so that Sustainability Expert requires more than the base maximum of ninety and is reached only with the perfect path bonus, while a team that has needed a single reinforcement step is at most an Advanced Practitioner. The teacher should therefore read the category together with the score and, above all, with the route that produced it: chapter 10 shows how.



Screenshot 6.2. The result screen at the end of an area. Captured on 8 September 2026.

6.7 From the fifth area to the checkpoint

When the fifth area is complete, the team first sees its score and category for that area and then, after pressing Continue, its cumulative score and category for the whole Understand phase; a checkpoint page with a single confirmation box follows. This is the moment at which the class leaves the screen for the Apply phase of chapter 7; the team ticks the box only when the teacher says so, and the platform records the date and time of the confirmation in the teacher's class log. After the confirmation the team watches a short introductory video and enters the Design Thinking workshop, which chapter 8 describes. Until the checkpoint is confirmed, the workshops are not available; until the five areas are complete, the checkpoint is not shown. Chapter 7 begins where the screen stops.

7. The Apply phase: classroom activities for the five areas

7.1 What the Apply phase is for

The Understand phase leaves every team with five scores, five categories and a route through the reinforcement steps of each area. It leaves the teacher with something more useful: a map of the types of error that the class has made. The Apply phase exists to work on that map in the room. Its purpose is threefold. It makes the reasoning behind the platform's feedback explicit, by asking teams to reconstruct, with their own words and materials, what the guided activities showed them on screen. It transfers that reasoning to the students' own discipline, so that a business studies class, a textile technology class, a science class or a language class each finds its own entry into the case. And it produces evidence of learning that the platform cannot record, because it is spoken, drawn, calculated and argued rather than selected from three options.

The phase is not a repetition of the quiz. Where the platform confronted each team with one question at a time, the classroom activity confronts the whole class with one problem at a time, and the teacher decides which problems the class needs. The session plan of chapter 4 allots one or two sessions to the phase. Between session 3 and session 4 the teacher reads the team logs (chapter 10) and chooses the activities: the areas in which the class scored lowest, or in which the same type of error appears in several teams, come first; an area in which every team reached the next level from the main scenario can be treated in ten minutes of discussion or left out.

7.2 How the activities are built

Each of the five activities below is derived from one or two of the guided activities of the corresponding area module, so that the classroom picks up exactly the reasoning that the platform reinforced. The data, however, are those of the full EcoTrack case (four thousand athletes, ten thousand sports tourists, five hundred volunteers, two weeks, two tonnes of textile waste), not the reduced figures of the quiz: the Apply phase is the step at which the class moves from the simplified event of the Understand phase to the case on which the workshops are built. Each is written for a class organised in the same teams as on the platform, for a period of fifty to sixty minutes, with ordinary classroom materials: flipchart or A3 paper, markers, sticky notes, and, for the two activities that involve calculation, a spreadsheet or a calculator. Each states the types of error it addresses, the competences of the two European frameworks it develops (chapter 3), the disciplines into which it can be anchored, and the evidence the teacher can collect at the end. Table 7.1 gives the overview; the lesson plan template in Annex A allows each activity to be adapted to a specific class, and the observation log in Annex B records what the teacher sees.

Area	Activity	Derived from	Types of error addressed	Disciplines	Evidence
1	The cascade of one garment	Guided activities Impact visualisation and Interconnection analysis	Economic focus, aesthetic focus, superficial solutions	Science, geography, economics, citizenship	Cascade map and problem statement
2	A sustainable business model on nine blocks	Guided activities Sustainable business model canvas and Stakeholder mapping	Single-dimension focus, stakeholder neglect, linear thinking	Business studies, ICT, textile and fashion technology	Canvas on A3 and stakeholder map
3	From goal to timeline to risk	Guided activities Sustainable SMART goals, Sustainable project timeline and Triple impact risk analysis	Vague goals, poor time management, narrow risk view, risk avoidance	Project management, mathematics, languages, logistics	SMART goal, timeline and risk matrix
4	Five trends, one opportunity, one future	Guided activities Analysis of convergent trends and Imagining sustainable futures	Fragmented analysis, single-trend focus, limited vision, incremental mindset	Science and technology, art and design, citizenship	Opportunity statement and 2030 scenario
5	The footprint of an event	Guided activities Resource footprint calculator and Efficiency benchmarking	Non-optimised reduction, numbers without insights, misleading partial analysis, single-price decision	Mathematics, science, catering and hospitality, ICT	Footprint spreadsheet and decision note

Table 7.1. The five Apply activities and their anchoring. Source: guided activities of the area modules.

Every activity follows the same three movements, which are the three movements of experiential learning described in chapter 2. In the first, recall, teams reconstruct from memory the scenario or guided activity of the platform that the activity builds on, and say which option they chose and why; this takes ten minutes and puts the platform's feedback back on the table. In the second, transfer, teams produce the artefact of the activity, working on data that the teacher has anchored in the discipline of the class; this takes thirty to thirty-five minutes. In the third, reflect, each team presents its artefact in two minutes and the class names the type of reasoning that the artefact corrects; this takes the remaining time and closes the loop with the vocabulary of chapter 6.

7.3 The five activities

Area 1. The cascade of one garment. The platform's guided activities of area 1 showed teams where four thousand abandoned garments end up and what a single technical shirt sets in motion once it is left by the lake: microplastics released for decades, chemicals in the water, fish that ingest the fibres, visitors who see the pollution, cleaning costs that fall on the community, possible ingestion through local fishing. In the classroom each team receives one garment, real or described (a running shirt, a pair of technical tights, a neoprene sleeve), and builds its cascade on a flipchart: the garment in the centre, its effects radiating outwards, each effect labelled as environmental, social or economic and connected to the next by an arrow. The teacher anchors the task in the discipline: a science class identifies the fibres and their degradation times; a geography class places the effects on a map of the lake, its catchment and its downstream users; an economics class prices the effects that have a price and names those that do not; a citizenship class asks who is responsible for each effect. The artefact closes with one sentence, written by the team, that states the priority problem a sustainable entrepreneur identifies at Agora Lake. In the reflection the class compares the sentences with the three options of the main scenario of area 1 and recognises the two wrong ones for what they are: an economic reading and an aesthetic reading of a systemic problem.

Area 2. A sustainable business model on nine blocks. Area 2 reinforced two things: that the value proposition of a sustainable smart-clothing business has four dimensions at once (performance for the athlete, durability, positive environmental impact, support for the local community), and that the stakeholders of such a

business are not only those who pay for the product but athletes, tourists, the local community, suppliers, the environment, regulators and investors. In the classroom each team draws the nine blocks of a business model canvas on A3 paper and fills them for a start-up that wants to sell sensor-equipped garments at the championships: four thousand athletes and ten thousand sports tourists over two weeks, products that are currently abandoned after the event, a protected natural area. The teacher anchors the task in the discipline: a business studies class works on revenue streams and cost structure and tests whether a repair service and a take-back scheme change them; an ICT class works on the key resources and key activities that a garment with sensors requires and on what happens to the sensor at end of life; a textile and fashion technology class works on the materials and the modularity that make the garment repairable. Around the canvas the team draws its stakeholder map, with every stakeholder connected to the block it affects. In the reflection the class checks each canvas for the two errors the area is designed to catch: a value proposition reduced to one dimension, and a stakeholder map reduced to the customer. The canvas produced here is a rehearsal for the Triple Bottom Line canvas of chapter 9 and can be kept for comparison.

Area 3. From goal to timeline to risk. Area 3 is the area of action, and its guided activities took teams through three tools in sequence: a SMART goal with sustainability criteria, a timeline that respects the rhythm of the event, and a matrix that answers each risk with a measure. In the classroom each team plans the collection of abandoned clothing at the championships as a project: four thousand athletes, ten thousand sports tourists, five hundred volunteers, two weeks of competition, two tonnes of textile waste expected, and a rainy season that begins the day after the last departures. The team writes one SMART goal (how much is collected, where, by when, with what effect on the lake and on local employment), draws a timeline from thirty days before the event to ten days after it and places on it the permits, the arrival of the athletes, the awareness campaign, the collection points, the intensive collection during the departures and the processing, and completes a matrix with five risks (rain, participation of international athletes, logistics costs, volunteer turnout, accusations of greenwashing) and one response for each. The teacher anchors the task in the discipline: a mathematics class quantifies the goal and the daily throughput of the collection points; a languages class writes the multilingual message for the athletes; a logistics or hospitality class designs the collection points and their staffing; a project management class uses the timeline as a Gantt chart. In the reflection the class looks for the errors of the area: goals that cannot be measured, collection that starts after everyone has left, a risk matrix that treats only the economic risk or a project abandoned because the risks are many.

Area 4. Five trends, one opportunity, one future. Area 4 reinforced the habit of reading several trends together and imagining a future that none of them describes alone. In the classroom each team receives five trends from the guided activity of the area (most athletes prefer to train outdoors; injuries rise with extreme changes in weather; most consumers ask for personalised products; regulation requires a halving of emissions by 2030; wearable technology grows by a third each year) and is asked to do two things. First, it writes one opportunity statement for a smart-clothing product that answers all five trends at once, and tests it against the temptation of the area's errors: treating the trends as five separate markets, or following only the strongest of them. Second, it describes Agora Lake in 2030 in one page or one poster, with the garment it has imagined in use, and says what the garment does for the athlete, for the destination and for the ecosystem. The teacher anchors the task in the discipline: a science and technology class works on the materials and sensors that would make the garment possible and on what is already available; an art and design class produces the poster and the garment's visual identity; a citizenship class asks who would be excluded from the future described and how to include them. In the reflection the class compares the scenarios and notices which of them are incremental improvements of existing products and which imagine a different system.

Area 5. The footprint of an event. Area 5 reinforced the arithmetic of resources: what an event consumes, where the largest savings are and how to compare two options on their total footprint rather than on one figure. In the classroom each team calculates, on a spreadsheet or by hand, the footprint of the championships, fourteen thousand five hundred people (four thousand athletes, ten thousand sports tourists, five hundred volunteers) over fourteen days, using the consumption rates of the guided activity (one hundred litres of water, ten kilowatt-hours of energy and two kilograms of waste per person per day, of which the two tonnes of textile waste are one part), and then answers the question the platform asked: where would a reduction of thirty per cent have the largest effect, and why is reducing everything evenly the wrong answer? In the second half the team compares the two caterers of the area's intermediate guided activity, one local, organic and dearer, with short transport and compostable packaging, the other international, cheaper, with long transport and plastic packaging, and writes a decision note that states which it chooses and on which total footprint, not on which single figure. The teacher anchors the task in the discipline: a mathematics class works on the calculation and on percentages; a science class on the energy and water figures and their sources; a catering and hospitality class on the caterers, the packaging and the waste; an ICT class on building the spreadsheet so that the assumptions can be changed. In the reflection the class names the errors that the area catches: totals without analysis, a reduction applied evenly, a comparison on one figure, a choice on price alone.

7.4 Closing the phase

The Apply phase ends when the class has produced its artefacts, presented them and named the reasoning they correct. Three things remain for the teacher. The artefacts are collected, or photographed, as the evidence of the phase; they will be useful again in session 8, when the whole journey is discussed, and the business model canvas of area 2 will be useful in the Triple Bottom Line workshop. The observation log in Annex B is completed for each team, with a note of which types of error the team showed on the platform and whether the activity resolved them; this is the record that chapter 10 turns into feedback. And the teacher tells the teams to log in and confirm the checkpoint, which the platform shows after the fifth area and which opens the workshops. The confirmation should be given in class and at the same moment for all teams, so that the class enters the Create phase together, and it should be preceded by a short introduction to the EcoTrack case that the workshops use, which the teacher will have read in the case study downloaded from the dashboard. From this point the platform has a new role: it no longer asks the teams to choose, it asks them to produce, and it asks the teacher to evaluate.

8. The Create phase, first workshop: the Design Thinking Canvas

8.1 What the workshop is

The first workshop of the Create phase asks each team to act as the founding team of EcoTrack Solutions, a start-up in sustainable smart sportswear, and to apply Design Thinking to the problem of the two tonnes of textile waste generated by the championships at Agora Lake. The workshop lasts ninety minutes, is run in teams of three to five, and is scored out of one hundred. It is the moment at which area 1 of the Understand phase, design thinking and sustainability values, becomes production: the team no longer chooses between three options but researches, writes, builds and tests.

The workshop is documented in three files that the teacher downloads from the dashboard (chapter 5): the case study, which the students read; the instructor manual, which contains the minute-by-minute facilitation, the intervention phrases for teams that are stuck, the checklist and the feedback template; and the evaluation rubric, which gives the criteria for each stage and for each of the five products. This chapter does

not repeat them. It explains how the workshop sits in the adaptive journey, what the platform asks of the team and of the teacher, and how the evaluation inside the platform works, so that the teacher can run the session with the manual in one hand and this chapter in the other (Figure 9).

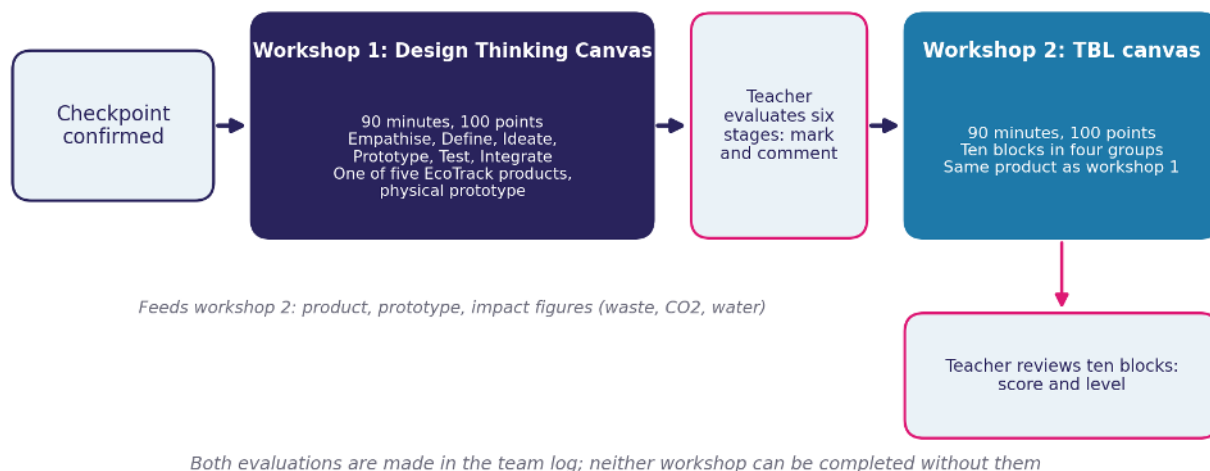


Figure 9. The arc of the two workshops: from the checkpoint to the Design Thinking Canvas, the teacher's evaluation of the six stages, the Triple Bottom Line Canvas and the teacher's review of the ten blocks.

8.2 The case and the five products

The case is the same event the teams already know, now with its full figures: four thousand professional and amateur athletes, ten thousand sports tourists, five hundred volunteers, two weeks, temperatures from minus five degrees in the morning to twenty-five at midday, three or four layers of clothing bought by each athlete and worn once or twice, two tonnes of abandoned textile waste. The challenge is to design a smart sportswear system that adapts to the whole range of temperature with a single outfit, operates on a circular model of rent, use and return, and reduces the waste drastically while proving that sustainability and sporting performance are compatible. The case supplies the technology, market and pricing context the students need and points them to online searches for the rest; no prior knowledge of the industry is assumed, and internet research is expected.

The EcoTrack system consists of five interconnected products, each with a description, the problem it solves, the materials for a low-fidelity prototype and what the prototype must show: a modular three-in-one jacket with removable layers; a smart thermal T-shirt with sensors for temperature, heart rate and hydration; the EcoTrack app for rental, performance data and sustainability points; a reusable circular packaging for collecting, carrying and returning garments; and an exchange and repair station with express cleaning. Teams select the one they will prototype when they open the workshop on the platform, and meet all five in the ideation stage.

8.3 The six stages and their scores

Table 8.1 gives the six stages of the canvas with their time, their score and the minimum expected output, as defined in the case and the manual. The stages are the classic sequence of Design Thinking, with a sixth stage that connects the proposal to the Sustainable Development Goals and quantifies its triple impact; this sixth stage is what makes the workshop a sustainability workshop and not only a design one, and it prepares the Triple Bottom Line canvas of chapter 9.

Stage	Time	Points	Minimum expected output
1. Empathise	15 min	15	Three user types with their needs; five priority equipment needs; one or two consequences of the waste problem

Stage	Time	Points	Minimum expected output
2. Define	10 min	15	A Point of View statement in the form user, need, because, with the problem quantified (4,000 athletes, 3 to 4 garments, 2 tonnes)
3. Ideate	20 min	20	At least three ideas for each of the five products; circular model and revenue ideas explored
4. Prototype	20 min	20	One physical low-fidelity prototype of the product chosen by the team, with its functional features visible
5. Test	15 min	15	Cross-testing with another team; impact table completed (waste avoided, CO ₂ , water); three documented improvements
6. Integrate	10 min	15	At least three SDGs connected with justification; triple impact quantified

Table 8.1. The six stages of the Design Thinking Canvas. Source: EcoTrack Solutions case study and instructor manual.

Two features of the scoring matter for the teacher. The stages are not of equal weight: ideation and prototyping carry twenty points each, the other four fifteen, so that the workshop rewards generating and making more than describing. And each stage has its own four-band scale, with the bands of the twenty-point stages wider than those of the fifteen-point stages; the rubric gives the criteria for each band, and for stage 4 it gives separate criteria for each of the five products, of which the teacher applies only those of the product the team chose. The four bands and the four total categories are given in Table 8.2, with the names that the platform shows to the team.

Level	Stages of 15 points	Stages of 20 points	Total of 100
Sustainability Champion	14 to 15	18 to 20	90 to 100
Eco-Entrepreneur	11 to 13	14 to 17	70 to 89
Green Innovator	7 to 10	10 to 13	50 to 69
Sustainability Learner	0 to 6	0 to 9	0 to 49

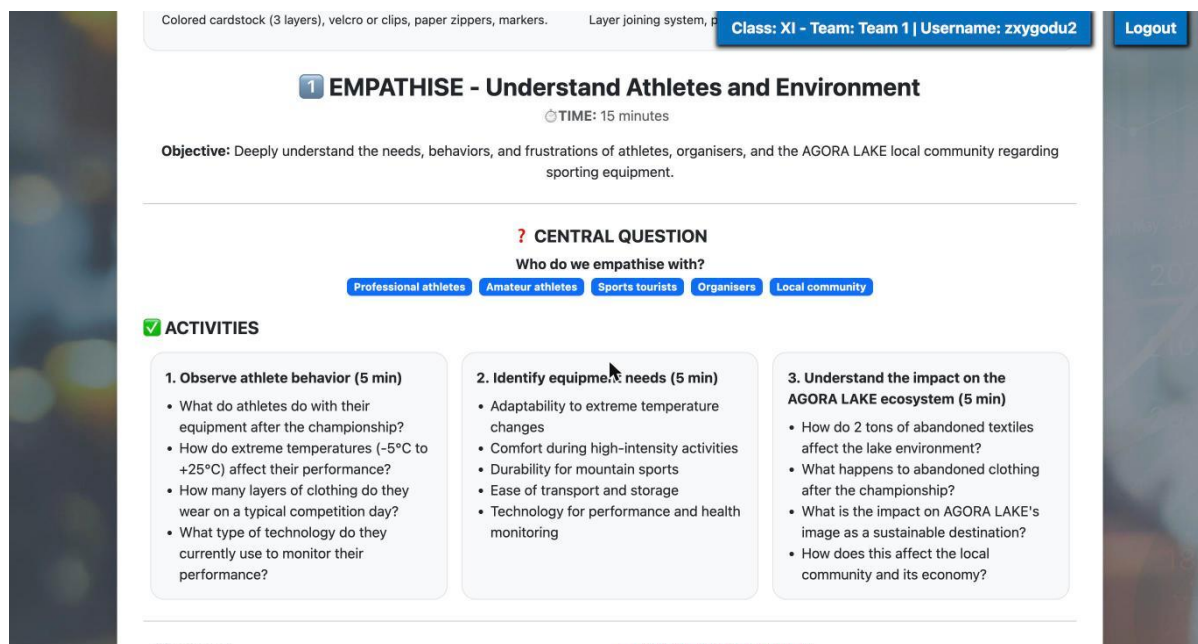
Table 8.2. Grading scale of the Design Thinking Canvas, by stage and in total. Source: EcoTrack Solutions instructor manual.

8.4 What the platform asks of the team

The workshop is a classroom session with cardboard, paper, markers and an internet connection; the platform is its record. When the team opens the workshop after the checkpoint, it watches a short video on the textile problem of the event and reads the instructions: ninety minutes, six blocks, one hundred points. It is then asked to select one of the five EcoTrack products, and from that point it meets the six stages in order, each with a text field of one thousand characters in which the team writes the deliverable of the stage: the user types and needs, the Point of View statement, the ideas, a description of the prototype, the feedback received and the impact figures, the SDGs and the triple impact. The physical prototype is not uploaded; the team describes it, and the teacher evaluates it in the room, on the rubric, before entering the mark. After the sixth stage the platform asks for a seventh text, a final reflection and next steps, which is not marked; it corresponds to the reflection questions that close the case study and is submitted with the button Save and Finish. The seven texts are the team's canvas in written form and they are kept: the team can export them to PDF from its own screen at any time after submission, the teacher can export the same record from the team log, and the platform shows the Design Thinking answers again inside the Triple Bottom Line canvas, so that the second workshop is built on the first without copying anything by hand.

The platform asks for the choice of product at the start of the workshop, and the choice cannot be changed afterwards; the same product is then carried into the Triple Bottom Line canvas. The team should therefore select, before the first stage, the product it intends to prototype, using the descriptions of the case; the ideation stage is nonetheless conducted on all five products, as the manual requires, since the ideas generated for the other four are what the team will need to describe the system its product belongs to.

When the reflection has been submitted the team sees a waiting screen, Awaiting evaluation, with three buttons: Refresh Status, Export to PDF and Continue to Canvas Model. Nothing further opens until the teacher has entered a mark and a comment for every one of the six stages, and the team should be told this before the session, so that the waiting screen is expected and not read as an error. Once all six stages are evaluated, the same screen shows Assessment Complete, the total score out of one hundred and its category, and, for each stage, the mark, the level reached and the teacher's comment; the button to the canvas model then leads to the second workshop.



Screenshot 8.1. A stage of the Design Thinking Canvas as seen by the team. Captured on 8 September 2026.

8.5 Running the session

The manual's minute-by-minute guide is the script of the session, and the teacher should follow it rather than this chapter for the facilitation itself. Three points, however, connect the session to the adaptive journey and are worth adding. First, the teams are the teams of the platform, with their Apply artefacts to hand: the cascade of area 1 feeds the Empathise and Define stages, the canvas of area 2 feeds the revenue ideas of the Ideate stage, and the footprint calculation of area 5 makes the impact table of the Test stage familiar. Second, the intervention phrases of the manual are, in effect, the teacher's version of the platform's first-level feedback: a question that points towards the reasoning rather than an answer, given when the team is stuck. The observation log of Annex B has a column for them. Third, the manual's warning signs by stage (generic users, a vague problem, fewer than ten ideas, a prototype without visible features, superficial feedback, SDGs listed without justification) are the workshop's equivalent of the types of error of the Understand phase, and the teacher who has read the team logs will often recognise in them the same reasoning the platform had already detected.

The time is tight and the manual is explicit that no stage should be extended at the expense of the next. Teams write their deliverables on the platform as they go, or at the end of each stage; the teacher should keep the platform's text fields in view of the students so that the writing does not become a separate task after the session.

8.6 Evaluating inside the platform

The evaluation is done in the team log (chapter 5), in the section for the Design Thinking workshop, which lists the nine steps of the team's route: the selection of the product, the six stages, the result and the

evaluation. For each of the six stages the teacher reads the team's text, enters a mark within the range of the stage (zero to fifteen or zero to twenty) and writes a comment of up to one thousand characters. The log offers two views, a detailed list, stage by stage, and a dashboard view that summarises the marks, and it can be exported to PDF, which is the record to keep and, if the school requires it, to attach to the student's file.

The marks should be given on the rubric, stage by stage, using the band criteria and, for stage 4, the criteria of the product chosen; the physical prototype, the cross-testing and the teamwork observed in the room are evaluated from the teacher's notes, since the platform holds only the texts. The comment should follow the three-part template of the manual: celebrate a specific element, question an alternative, suggest a concrete step towards the next level. Written this way, the six comments are the formative feedback of the Create phase, and chapter 10 shows how to return them to the team together with the results of the Understand phase.

The evaluation takes place between the two workshops, outside the classroom, and it is the only step of the journey that the teacher must complete before the teams can continue. For a class of six teams, an hour is a reasonable allowance, as noted in chapter 4.

#	Phase	Team Status	Grading	Response Preview	Date
1	SelectProblem	Completed	N/A	Selected Product: 3-IN-1 MODULAR JACKET	
2	Empathize	Completed	Graded	TEST ENTRY (trial team, 8 September 2026). Users: professional athletes (need a ...	9/8/26, 12:05 PM
3	Define	Completed	Graded	TEST ENTRY. POV: The athletes of the Agora Lake Championship need a single game...	9/8/26, 12:05 PM
4	Ideate	Completed	Graded	TEST ENTRY. Jacket: magnetic layer joints, QR size tag, rental for the two weeks...	9/8/26, 12:05 PM
5	Prototype	Completed	Graded	TEST ENTRY. Cardboard prototype of the 3-in-1 jacket: three coloured layers (blu...	9/8/26, 12:05 PM
6	Test	Completed	Graded	TEST ENTRY. Feedback from team B: would rent it; unclear how layers detach; want...	9/8/26, 12:05 PM
7	Integration	Completed	Graded	TEST ENTRY. SDG 12: rental replaces purchase, waste from 2,000 lbs to 400 lbs	9/8/26, 12:05 PM

Stage Progress: 6/6 completed

Screenshot 8.2. The evaluation of a stage in the team log, detailed list view. Captured on 8 September 2026.

9. The Create phase, second workshop: the Triple Bottom Line Business Model Canvas

9.1 From prototype to strategy

The second workshop asks each team to take the product it prototyped in the first and answer a different question: not whether it works, but how it can be brought to market in a way that is profitable, sustainable and fair at the same time. The instrument is the Triple Bottom Line Business Model Canvas, an adaptation of the classic business model canvas in which every block is read through the three dimensions of People, Planet and Profit. The workshop lasts ninety minutes, is run in the same teams of three to five, and is scored out of one hundred. It is the moment at which area 2 of the Understand phase, business model generation and embracing complexity, becomes production, and it closes the arc of Figure 9: a prototype that proved the product solves a problem, and a canvas that proves the business around it is viable.

The three dimensions are the frame of every block. People asks what social benefit the product generates: whether it creates jobs, democratises access to technology, improves the safety of athletes. Planet asks what positive environmental impact it generates: whether it reduces waste, carbon dioxide or water consumption, and whether it is circular. Profit asks whether it is profitable: where revenue comes from, and whether the benefits justify the costs. The manual's guiding question for the whole session, to be asked of every block, is how the decision affects People, Planet and Profit; and its warning sign for the whole session is a canvas focused on Profit alone, which is the workshop's form of the single-dimension error that area 2 was designed to detect.

As for the first workshop, the case study, the instructor manual and the evaluation rubric are downloaded from the dashboard and are the facilitation documents; this chapter explains the connection to the journey and the work inside the platform. The one rule that the manual repeats at every step, and that the platform enforces, is that the product is the same as in the first workshop: no team changes product, and the session opens with each team showing its prototype, physical or photographed, and restating the problem it solved.

9.2 The ten blocks and their scores

The canvas has ten blocks, completed in four thematic groups and in a fixed order within forty-five minutes of the session: market (segments, relationships, channels), value proposition, operations (activities, resources, partners) and finances and impact (costs, revenue, metrics). Table 9.1 gives the blocks, their score and the minimum expected content as stated in the manual. The value proposition carries eighteen points, the most of any block, because it is where the three dimensions must be made explicit and at least one benefit quantified; costs and revenue carry twelve each, because a triple bottom line business must show that its revenue covers costs that are themselves classified as social, environmental and operational.

Group	Block	Points	Minimum expected content
A. Market (12 min)	1. Customer segments	8	Two differentiated segments with product-specific needs
	2. Customer relationships	8	A retention strategy and a mechanism that motivates the return of garments
	3. Channels	8	Two channels, at minimum the app and the physical station
B. Value (12 min)	4. Triple Bottom Line value proposition	18	One benefit per dimension, People, Planet and Profit, at least one quantified
C. Operations (12 min)	5. Key activities	10	Three or four activities with a circular focus (repair, reuse, return)
	6. Key resources	8	Resources classified as physical, human and technological
	7. Key partners	8	Three or four partners with a specific justification of their contribution
D. Finances and impact (9 min)	8. Triple Bottom Line cost structure	12	Costs classified across the three dimensions
	9. Sustainable revenue streams	12	At least three revenue streams with justification
	10. Triple Bottom Line impact metrics	8	One measurable indicator per dimension, with a target value

Table 9.1. The ten blocks of the Triple Bottom Line canvas, their scores and minimum content. Source: EcoTrack Solutions instructor manual, workshop 2.

Each block has a four-band scale in the rubric, with the bands proportional to the block's score, and for each band the rubric states the criteria to be met; Table 9.2 gives the bands and, for each block, the indicator that distinguishes the highest band from the minimum. The total is translated into the same four categories as

the first workshop, Sustainability Champion from ninety points, Eco-Entrepreneur from seventy-five, Green Innovator from sixty and Sustainability Learner below sixty, as shown on the grading page of the platform. The manual describes the four levels in terms the teacher can use in feedback: an exceptional canvas has all three benefits quantified, full coherence between blocks and a model that is circular and scalable; a well-developed canvas has the triple bottom line present in most blocks and a viable model with some dimensions less developed; a basic canvas has good ideas but a superficial triple bottom line and lacks quantification or coherence; an incomplete canvas has no triple bottom line integration and a model focused on profit alone.

Block	Bands (Champion, Eco-Entrepreneur, Green Innovator, Learner)	Champion-level indicator
1. Customer segments	8, 6, 4, 0 to 2	Three or more segments with distinct needs and a pricing justification for each
2. Customer relationships	8, 6, 4, 0 to 2	An active community or points programme with estimated retention metrics
3. Channels	8, 6, 4, 0 to 2	A coherent omnichannel strategy that reduces the carbon footprint of the sales channel
4. Value proposition	18, 13 to 15, 7 to 12, 0 to 6	All three benefits product-specific, quantified and mutually coherent
5. Key activities	10, 7 to 8, 4 to 6, 0 to 3	Each activity linked to a dimension with an impact indicator
6. Key resources	8, 6, 4, 0 to 2	All resources justified by their contribution to the sustainability of the model
7. Key partners	8, 6, 4, 0 to 2	Diversified partners contributing to all three dimensions
8. Cost structure	12, 9 to 10, 5 to 8, 0 to 4	All costs estimated; social or environmental return on investment argued
9. Revenue streams	12, 9 to 10, 5 to 8, 0 to 4	Four or more diversified streams with the estimated share of each
10. Impact metrics	8, 6, 4, 0 to 2	All indicators specific, measurable, achievable and relevant

Table 9.2. Bands of the rubric by block and Champion-level indicators. Source: EcoTrack Solutions evaluation rubric and instructor manual, workshop 2.

9.3 What the platform asks of the team

After the first workshop has been evaluated, the team passes through a short introduction to the Triple Bottom Line and a welcome page, and then opens the canvas. The screen reproduces the layout of a business model canvas, with the ten blocks in their usual positions and the maximum score of each shown on the block; each block opens, through a Fill button, a window with a text field of five hundred characters, and block 10 has four such fields, one for the overall impact and one for each of the three dimensions. The product selected in the first workshop and the Design Thinking answers can be displayed at any moment from two buttons at the top of the canvas. The team writes the ten blocks in the order of the manual, during the forty-five minutes of group work or as each group is completed, and submits the canvas with the button Let's go; the platform confirms that the canvas is being reviewed by the teacher and asks the team to wait. The presentations, the questions after each presentation and the closing synthesis of the manual take place in the room and are not recorded on the platform; the teacher's notes on them feed the review.

Class: 3 - Team: Team 2 | Username: mogkwnj Logout

Business Model Canvas - Triple Bottom Line

Sustainable Smart Clothing in ÁGORA LAKE

People (Social) Planet (Environmental) Profit (Economic) View selected product View DTH Answers

7. Key Partners MAX: 8 pts Fill

5. Key Activities MAX: 10 pts Fill

4. Value Proposition TBL MAX: 18 pts Fill

2. Customer Relationship MAX: 8 pts Fill

1. Customer Segments MAX: 8 pts Fill

6. Key Resources MAX: 8 pts Fill

3. Channels MAX: 8 pts Fill

LET'S GO!

Screenshot 9.1. The Triple Bottom Line canvas as seen by the team, with the selected product and the Design Thinking answers available.
Captured on 8 September 2026.

9.4 Running the session

The manual's minute-by-minute guide is the script: ten minutes of introduction in which each team shows its prototype and the teacher presents the canvas and the link between the two workshops; five minutes to confirm the product and explain the four groups of blocks and their timing; forty-five minutes of development, group by group; twenty minutes of presentations of three to four minutes per team, each followed by one or two questions; ten minutes of closing in which the teacher names the arc explicitly, a prototype that works and a canvas that makes it viable. Three additions connect the session to the journey.

First, the teams bring their earlier work. The nine-block canvas drawn in the Apply activity of area 2 is the direct precursor of this one, and comparing the two shows the class what the triple bottom line adds: a value proposition with three dimensions instead of one, costs classified as social, environmental and operational, an impact indicator next to each financial one. The impact figures calculated in the Test stage of the first workshop, waste avoided, carbon dioxide, water, are the raw material of block 10 and of the Planet benefit of block 4, and the footprint calculation of area 5 makes them familiar.

Second, the manual's intervention phrases are, as in the first workshop, questions rather than answers, and they map onto the errors of the area: to a canvas focused only on profit, what jobs the product creates and how it reduces waste; to a vague metric, how much exactly, with an online search for a real number; to a generic value proposition, what the product does that a conventional jacket cannot; to a partner without justification, what that partner contributes to the environmental or social side of the model; to a single revenue stream, whether repair services, subscriptions or the sale of anonymous data could be added; to a team stuck on costs, how much it costs to operate, how much is invested in sustainability and how much in people. The warning signs of each group, a single generic segment, a purely economic value proposition, activities without circularity, costs without classification, one revenue stream, vague metrics, are the observation points for the log in Annex B.

Third, the case study gives six guiding questions for the analysis that the teacher can use in the presentations and in the closing: which of the three dimensions is strongest in the canvas and which weakest, and why; which revenue stream has the greatest potential and whether it is compatible with the circular model; why the circular model remains viable in the long term if rental earns less than direct sales; which partnership is

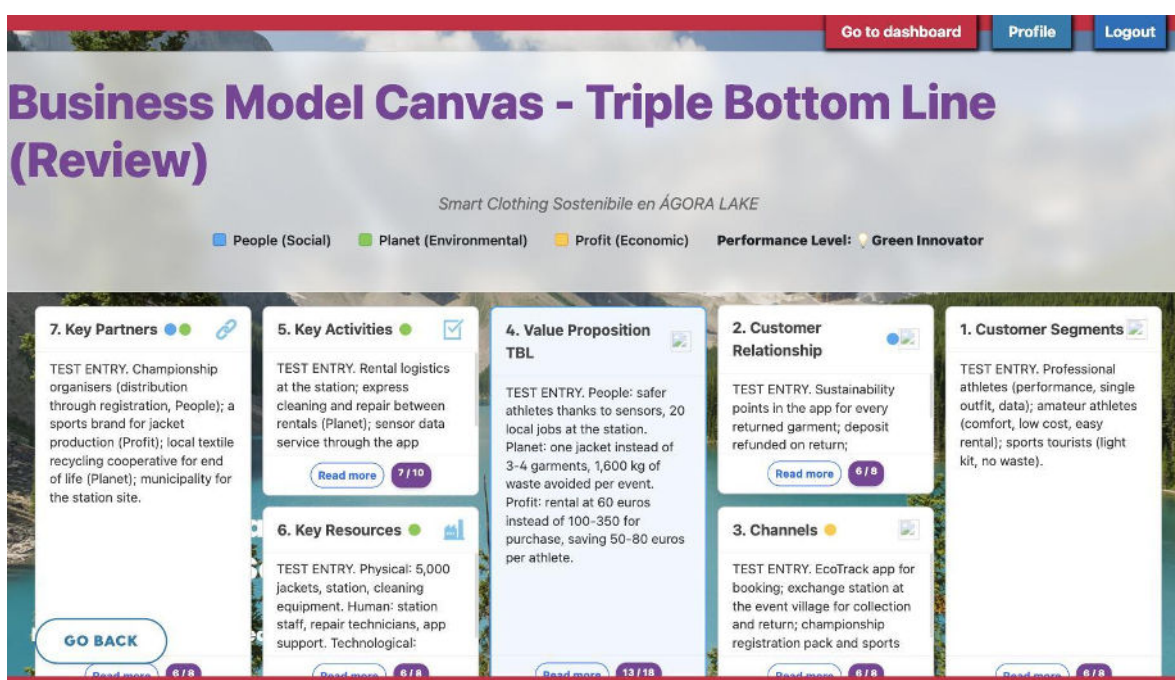
most critical and what happens if it falls through; how the canvas changes if the model is scaled to other sporting events; which environmental indicator can be calculated from the data of the first workshop. The last two questions are the bridge to the reflection of session 8.

As in the first workshop, the time is tight and the manual is explicit that the development phase must not be extended at the expense of the presentations and the closing; the teacher should keep the four groups on the clock and treat the presentations as part of the learning rather than as a formality.

9.5 Reviewing inside the platform

The review is done from the team log. When the team has submitted, the canvas section of the log shows the status Completed and a button, Review and Grade, which opens the canvas as the team wrote it; a second button, Grade Canvas, opens the grading page. There the ten blocks are listed with their maximum, each with a score entered by the plus and minus buttons or typed, and the final grade and the level of performance are recalculated as the scores are entered. The rubric is available on the same page, through the button View Criteria, block by block and band by band, so that the teacher does not need the printed rubric to hand; as in the first workshop, the criteria are applied to the product the team chose, since a value proposition for the exchange station and one for the app are not judged on the same benefits. The coherence between blocks, which the manual lists among the Champion-level indicators and which the presentation makes visible, is judged from the whole canvas and from the teacher's notes rather than from any single block. The grading is saved with Confirm Grading, after which the review page shows the score of each block and the level reached. The grading page has no field for a written comment: the feedback on the canvas is given in the room, following the manual's template, celebrate, question, suggest, and is returned in session 8 together with the feedback on the first workshop and on the Understand phase, as chapter 10 describes.

Once the grading is confirmed the team's journey on the platform is complete. The team sees a final page, Game summary, which brings together the three sections of the journey: the score and category of each area and of the whole Understand phase, the mark and level of each Design Thinking stage with the total, and the score of each canvas block with the total and the level of performance; from this page the team can export the canvas to PDF. In the teacher's views the team appears as graduated. The two exported records, the Design Thinking log and the canvas, are the Create phase's evidence and can be attached to student's file.



Screenshot 9.2. The grading page of the Triple Bottom Line canvas. Captured on 8 September 2026.

CONGRATULATIONS!

Here is your complete
GAME SUMMARY

Review your performance across all sections

1. LEARNING AREAS

Sustainability Level achieved in Quiz section:

SUSTAINABILITY CHAMPION
You are a true sustainability champion!
Your exceptional mastery positions you as a leader of change.

AREA	SCORE
Area 1	75
Area 2	120 (90 + Bonus)
Area 3	120 (90 + Bonus)

Screenshot 9.3. The Game summary seen by the team at the end of the journey. Captured on 8 September 2026.

10. Reading the logs, giving feedback and closing the journey

10.1 What the platform records, and what it does not

At the end of a cycle the platform holds, for every team, three sets of results. For the Understand phase the team log shows the score of each area, out of one hundred and twenty; the total out of six hundred and the categories are shown to the team on its result screens and follow from the scores through Tables 6.3 and 6.4. For the Design Thinking workshop it holds the seven texts, the mark and comment of each of the six stages and the total out of one hundred. For the Triple Bottom Line canvas it holds the ten blocks, the score of each and the total out of one hundred with its level of performance. Around these it records the team's position in the journey, as a percentage and as a named step, and the date and time at which the checkpoint was confirmed.

It does not record the route by which a team obtained an area score, the discussion that preceded a choice, the physical prototype, the presentations or anything that happened in the Apply phase. Those are in the teacher's observation log (Annex B) and in the artefacts collected in the classroom. Reading the results therefore always means reading two records together, the platform's and the teacher's, and Figure 10 shows how the two combine into a teaching decision.

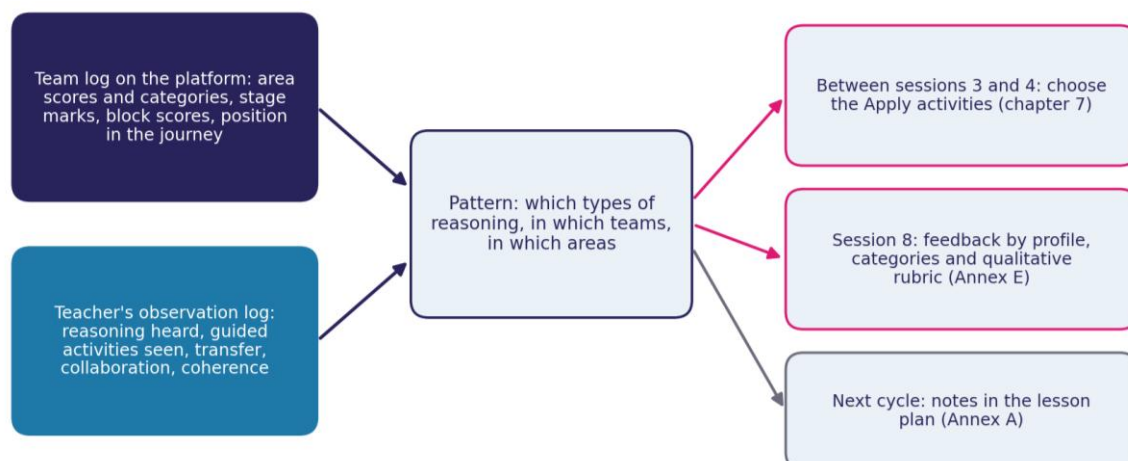


Figure 10. From the team log to the teaching decision: the platform's record, the teacher's observation log, the pattern they reveal and the response in the classroom.

10.2 Reading the area scores

The area score is the most compressed of the platform's results, and the most informative once its construction is known (chapter 6). Three readings are possible, in increasing depth.

The first is the category, which the team also sees and which is the language of the feedback session. The second is the score against the two landmarks of the scale: one hundred and twenty means that the team answered the three main scenarios at the first attempt, since the bonus is awarded only for a perfect route; ninety or below means that at least one wrong answer was given, and the further the score falls below ninety, the more reinforcement steps the team needed and the higher the level at which it needed them, because mistakes at the Advanced level cost more than at the Initial level. The reading is approximate at the low end of the scale: since the score cannot fall below zero, errors made at the start of an area, before any point has been earned, leave no trace, and the observation log is their only record. The third reading is the pattern across the five areas: a team that scores full marks in areas 1, 3 and 4 and drops in areas 2 and 5 has a specific difficulty with systemic thinking about business models and resources, not a general weakness, and the pattern across the class, area by area, shows where the whole group falls back on the reasoning that the platform is designed to detect.

The pattern is what the teacher uses between session 3 and session 4 to choose the Apply activities, as chapter 7 describes: the areas with the lowest class average first, then the areas in which several teams have low scores even if the average is acceptable. The observation log adds what the score cannot: which team was routed to which guided activity, seen over the students' shoulders in session 1, and which types of error the teacher heard in the discussion before the choice. Where the log and the score disagree, for instance a high score obtained by a team in which one student answered for the others, the log prevails, and the Apply activity is the place to find out what the other students understood.

10.3 Reading the workshop results

The workshop results are read differently, because the teacher produced them. Their value in the feedback session lies in the profile rather than in the total: a Design Thinking canvas with full marks in Empathise and Define and low marks in Test and Integrate describes a team that understands users and problems but does not yet validate or quantify; a canvas with a strong value proposition and weak cost and revenue blocks describes a team that can state what value it creates but not yet how the business survives. These profiles are the content of the comments, which should say, stage by stage or block by block, what was done well, what alternative was not considered and what concrete step would reach the next band; the manual's template, celebrate, question, suggest, applies to both workshops.

The two workshop totals and the Understand total should also be read together. A team that is a Sustainability Champion on the quiz and a Green Innovator on the canvas has shown that it can recognise sustainable reasoning when it is offered as an option and has not yet shown that it can produce it; the reverse profile, less common, describes a team that builds well but reads scenarios carelessly. Both are ordinary, both are useful to say aloud, and neither is a mark.

10.4 The feedback session

Session 8 of the plan in chapter 4 is a session of feedback and reflection, and it has four parts. In the first the teacher returns the results to each team, in the platform's own terms, categories and scores, and in the profile terms above, using the exported records as the document that the team keeps. In the second the class

looks at its own pattern across the five areas and names, with the vocabulary of chapter 6, the types of reasoning it found hardest; this is the moment at which the platform's feedback, which each team read alone on screen, becomes shared knowledge. In the third the two artefacts, prototype and canvas, are discussed as the outcome of the journey rather than as tasks: the case study's closing questions, what the team learned about the textile industry and how the method turned a complex problem into a concrete solution, and the canvas's questions on the strongest and weakest dimension and on scaling the model, are the prompts. In the fourth the teacher collects the students' view of the experience, in whatever form the school uses, so that the next cycle can be adjusted.

For the teacher's own record, the qualitative rubric in Annex E describes each team on four dimensions that the platform does not score: the quality of the reasoning heard in discussion, the transfer of the case to the students' own discipline in the Apply phase, the collaboration observed in the workshops, and the coherence between what the team chose in the simulation and what it built. It is written in the same four levels as the platform's categories, so that the two records can be placed side by side, and it is the evidence of the competences of chapter 3 that a score alone cannot document.

10.5 Closing the cycle

Three actions close a cycle. The class list is exported to Excel and the team records to PDF, and the files are stored with the artefacts of the Apply phase; together they document the journey for the school and, where required, for the students' files. The teams that have finished are deleted from the class if the class is to be reused, which removes their records from the platform, so the export must come first. And the teacher notes, in the lesson plan of Annex A, what should change next time: which areas needed more time, which Apply activity worked in the discipline, where the timing of the workshops slipped. The start-up checklist in Annex C then begins the next cycle.

The journey is designed so that its results can be read by a teacher who was not in the room, and this guide has tried to make that reading possible. But the model is adaptive within the screen and the teacher is adaptive around it, as chapter 2 argued; what a class learns from Agora Lake depends on what is done with the scores, the errors and the artefacts once the screen is switched off. That part of the model is not on the platform, and it is the part this guide exists to support.

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Annexes

Annex A. Lesson plan for an Apply activity

The template below is filled in once per Apply activity (chapter 7) and kept with the artefacts of the phase. It is written for one class and one session; where an activity is split over two sessions, one plan is used for both with the timing adjusted.

Field	Entry
Class, date, session number in the cycle	
Area and activity (from Table 7.1)	
Types of error addressed (from the team logs, chapter 10)	
Teams concerned (all, or those listed)	
Discipline of the class and anchoring chosen (from chapter 7)	
Learning outcome in the terms of the framework (Table 3.1, level)	
Materials	
Recall (about 10 minutes): scenario or guided activity to be reconstructed; prompt question	
Transfer (30 to 35 minutes): task, data provided, artefact expected	
Reflect (10 to 15 minutes): presentation format; the type of reasoning the class should name	
Evidence collected (artefact, photograph, note)	
Observations for the log (Annex B)	
What to change next time	

Annex B. Observation log

One sheet per team for the whole cycle. The first two columns are copied from the team log on the platform; the others are the teacher's record of what the platform does not see. The four levels of the qualitative rubric (Annex E) are used in the last block, so that the two records can be read side by side in session 8.

Understand phase	Entry
Area scores and categories (from the team log)	1: 2: 3: 4: 5: Total:
Guided activities observed in class (area, level, activity)	
Types of reasoning heard in the team's discussion before choosing	
Who answered: the team, or one student for the others	
Pattern noted (areas where the team needed reinforcement)	
Apply phase	Entry
Activities done (area, date)	
Artefact produced and its quality	
Type of reasoning named by the team in the reflection	
Transfer to the discipline: what the team connected, and how well	
Intervention questions asked, and the team's response	
Create phase	Entry
Design Thinking: product chosen; marks by stage (from the team log)	
Prototype: functional features visible; quality of the cross-testing	
Warning signs observed (from the instructor manual)	
Canvas: scores by block and level (from the team log)	
Presentation: coherence between blocks; weakest dimension	
Coherence between the choices made in the simulation and what the team built	
Qualitative rubric (Annex E), level per dimension	Entry
Reasoning in discussion	
Transfer to the discipline	
Collaboration in the workshops	
Coherence between simulation and production	
Notes for the feedback session	

Annex C. Start-up checklist

To be completed before session 1. Each item corresponds to a step of chapter 5.

Step	Done
Registered as a teacher at games.seisc.eu and logged in once	
Downloaded the eight documents from the dashboard (manual, quick guide, case study and rubric for each workshop) and read the two case studies	
Watched the tutorial in six steps on the dashboard	
Created the class with its section and the number of teams; noted which students belong to which team number	
Exported the class list to Excel and stored it	
Prepared the credentials: slips printed from the export, or e-mail addresses ready for sending from the class list	
Added a trial team, logged in as that team and played area 1 to see the reinforcement route; deleted the trial team	
Opened one team log and located the score section, the Design Thinking section and the canvas section	
Checked that each team will have one device with a browser and an internet connection	
Placed the eight sessions of chapter 4 in the timetable, with the two double periods and the two intervals outside the classroom	
Prepared the introduction to the case for session 1 (the event, the two tonnes, the five areas, the three phases)	
Read chapter 6 and kept Annex D to hand for the Understand sessions	

Annex D. Quick reference to the scenarios

For each area, the nine scenarios in the order in which teams meet them, with the question, the types of error attached to the two wrong options and the two guided activities of each level. The context of each scenario and the full text of the options are on the platform; this reference is meant to be kept open during the Understand sessions so that the teacher can recognise, from a team's screen or from its discussion, which reasoning the platform is about to address. The types of error are those defined in the design of the area modules.

Area 1. Design thinking and sustainability values

Level	Scenario	Question	Types of error of the wrong options	Guided activities of the level
Initial	Main scenario	As a sustainable entrepreneur, what priority problem do you identify?	economic focus; aesthetic focus	Impact visualisation, Sustainability definition
Initial	Alternative scenario 1	What is the main impact of this situation?	economic focus; aesthetic focus	
Initial	Alternative scenario 2	From a sustainability perspective, this solution is:	economic focus; economic focus	
Intermediate	Main scenario	Which design thinking approach is most appropriate?	lack innovation; economic focus	Design thinking workshop, Interconnection analysis
Intermediate	Alternative scenario 1	How do you apply design thinking to balance these needs?	single stakeholder; superficial solutions	
Intermediate	Alternative scenario 2	What is your design thinking approach to solving this complexity?	single stakeholder; superficial solutions	
Advanced	Main scenario	Your most innovative solution is:	traditional thinking; incomplete integration	Ethics framework development, Innovation systems design
Advanced	Alternative scenario 1	How do you integrate advanced design thinking with your ethical framework to find a solution?	economic focus; traditional thinking	
Advanced	Alternative scenario 2	What is your most innovative proposal that integrates design thinking, sustainability, and commercial viability?	incomplete integration; traditional thinking	

Area 2. Business model generation and embracing complexity

Level	Scenario	Question	Types of error of the wrong options	Guided activities of the level
Initial	Main scenario	What elements should a sustainable business model for smart clothing include?	single dimension focus; traditional models	Sustainable business model canvas, Stakeholder mapping
Initial	Alternative scenario 1	How should these stakeholders interact in a sustainable business model?	stakeholder neglect; single dimension focus	
Initial	Alternative scenario 2	Which model best represents the complexity of sustainability?	superficial integration; complexity avoidance	
Intermediate	Main scenario	Which circular economy approach would be most effective?	linear thinking; single dimension focus	Circular economy analysis, Analysis of systemic interactions
Intermediate	Alternative scenario 1	How should you analyse these interactions?	superficial integration; linear thinking	

Level	Scenario	Question	Types of error of the wrong options	Guided activities of the level
Intermediate	Alternative scenario 2	How do you evaluate the sustainability of this model with systems thinking?	single dimension focus; superficial integration	
Advanced	Main scenario	What is your most innovative business model proposal?	traditional models; traditional models	Design of adaptive strategies, Integration of impact metrics
Advanced	Alternative scenario 1	How do you create adaptive strategies to manage this uncertainty?	inflexible strategies; inflexible strategies	
Advanced	Alternative scenario 2	How do you integrate impact metrics with economic indicators?	metrics disconnection; metrics disconnection	

Area 3. Into action and acting for sustainability

Level	Scenario	Question	Types of error of the wrong options	Guided activities of the level
Initial	Main scenario	What is your first step to ensure the success of the project?	action without planning; reactive approach	Defining sustainable SMART goals, Sustainable project timeline
Initial	Alternative scenario 1	What are the critical milestones for the next 4 weeks?	poor time management; single focus trap	
Initial	Alternative scenario 2	How do you recognise your potential to overcome this challenge?	self limiting beliefs; compliance ignorance	
Intermediate	Main scenario	Which approach maximises sustainable impact?	centralised thinking; value extraction	Triple impact risk analysis, Stakeholder mapping and collaboration
Intermediate	Alternative scenario 1	How do you comprehensively assess these risks and opportunities?	narrow risk view; risk avoidance	
Intermediate	Alternative scenario 2	How do you structure effective collaboration?	siloes collaboration; top down approach	
Advanced	Main scenario	How do you measure and report the comprehensive impact?	superficial metrics; traditional metrics	Impact measurement system design, Inspirational leadership strategy
Advanced	Alternative scenario 1	What is your comprehensive plan for sustainable value creation?	rigid scaling; mission drift	
Advanced	Alternative scenario 2	How do you lead and inspire collective action?	passive leadership; coercive approach	

Area 4. Ideas and opportunities and envisioning sustainable futures

Level	Scenario	Question	Types of error of the wrong options	Guided activities of the level
Initial	Main scenario	What is the most promising opportunity to develop with smart clothing?	shallow opportunity; lack sustainability focus	Sustainable opportunities map, Imagining sustainable futures
Initial	Alternative scenario 1	What sustainable opportunity do you identify?	conventional solution; reactive approach	
Initial	Alternative scenario 2	What is the most transformative innovation?	limited traditional solution; insufficient incremental improvement	

Level	Scenario	Question	Types of error of the wrong options	Guided activities of the level
Intermediate	Main scenario	Which analysis reveals the best opportunity for innovation?	fragmented analysis; negative bias	Analysis of convergent trends, Multi-stakeholder assessment
Intermediate	Alternative scenario 1	How do you analyse this situation strategically?	narrow mentality; negligent analysis	
Intermediate	Alternative scenario 2	How do you assess these divergent needs?	one sided vision; short term economics	
Advanced	Main scenario	What is your transformative vision?	greenwashing; incremental thinking	Design of systemic solutions, Validation of radical innovations
Advanced	Alternative scenario 1	What is your most advanced biomimetic innovation?	lack originality; surface design	
Advanced	Alternative scenario 2	How do you structure your winning pitch?	incomplete pitch; lack preparation	

Area 5. Resources and sustainability complexity

Level	Scenario	Question	Types of error of the wrong options	Guided activities of the level
Initial	Main scenario	What resources are most important to manage for the sustainability of the event?	fragmented vision resources; unsustainable linear solution	Inventory of essential resources, Resource footprint calculator
Initial	Alternative scenario 1	How do you identify the best resource-saving opportunities?	technological setback; inefficient conformism	
Initial	Alternative scenario 2	What energy resources would you prioritise for the event?	short term vision; false economy	
Intermediate	Main scenario	How do you analyse which option is more resource-efficient?	one dimensional analysis; blindness environmental value	Efficiency benchmarking, Multi-resource optimisation
Intermediate	Alternative scenario 1	What efficiency analysis do you propose?	ineffective generic solution; surveillance not prevention approach	
Intermediate	Alternative scenario 2	How do you evaluate overall resource efficiency?	incomplete metric; prioritise speed over sustainability	
Advanced	Main scenario	What is your most innovative circular economy proposal?	partial circularity; displacement problem	Circular design from scratch, Circularity metrics
Advanced	Alternative scenario 1	What integral circular system do you propose?	surface measurement; linear outsourcing	
Advanced	Alternative scenario 2	How do you structure your comprehensive proposal?	compensation no reduction; limiting thought	

Annex E. Qualitative rubric

Four dimensions that the platform does not score, described on the same four levels as the platform's categories so that the two records can be compared. The rubric is completed once per team at the end of the cycle, from the observation log (Annex B), and is discussed with the team in session 8.

Dimension	Champion	Practitioner	Learner	Beginner
Reasoning in discussion: how the team argued before choosing an option or writing a deliverable	Weighed environmental, social and economic consequences together and named the trade-off before choosing	Considered more than one dimension, with one usually dominant	Argued from one dimension, usually cost or image, and corrected after feedback	Chose without discussion or by deferring to one member
Transfer to the discipline: how the team connected the case to its own subject in the Apply phase	Reformulated the problem in the terms of the discipline with data or methods of its own and drew a conclusion the case did not give	Applied a method or data of the discipline to the case correctly	Recognised the connection when it was pointed out and used it partially	Treated the activity as separate from the subject
Collaboration in the workshops: how the team worked in the two ninety-minute sessions	Shared roles, kept to the timing of each stage and integrated disagreements into the artefact	Worked together with occasional imbalance, kept to the timing	Depended on one or two members, lost time in one stage	Fragmented, with stages left incomplete
Coherence between simulation and production: whether what the team built reflects what it chose in the five areas	Prototype and canvas apply the reasoning the team showed in the areas, and the team can say so	Artefacts are sound but the link to the areas is made only when asked	Artefacts contradict choices made in the areas on at least one point	No relation between the areas and the artefacts is visible

Annex F. Known issues

Behaviours of the platform, as available in September 2026, that a teacher may meet and that are not errors of use. Each is stated with what to do.

What you may notice	What to do
The class label in a team's header shows the section of the class (for instance Class: OpenCom), while the teacher's log shows class and section (for instance Class: Erina - Section: OpenCom)	Tell teams their class as it appears on their own screen; the two labels refer to the same class
After a team logs in on a second tab of the same browser where the teacher is logged in, the teacher's pages show the team's name in the header	Do not run the teacher session and a team session in the same browser; use a separate browser or a private window for the team, or a different device
The progress label in the class list may lag behind the team's actual position, for instance still showing the canvas instructions after the canvas has been submitted	Open the team log and refresh it; the log shows the current status and, for the canvas, the Review and Grade button when the canvas is in
The product chosen at the start of the Design Thinking workshop cannot be changed	Have the team choose deliberately, using the descriptions of the case, before the first stage; the same product is carried into the canvas
On the canvas grading page, a score typed directly into a field is not always reflected in the final grade until the plus or minus button of that field is used	Enter scores with the plus and minus buttons, or press plus and then minus after typing, and check the final grade before confirming
The result screen of an area shows only the option to continue; an area cannot be replayed	Explain to teams that each area is played once and that the reinforcement route within an area is where recovery takes place
The two quick guides downloadable from the dashboard are earlier summaries and differ from the manuals and the platform on some points and thresholds	Use the instructor manuals and the rubrics; the quick guides can be given to students as an overview only

Adaptive Teacher's Guide to teach sustainable entrepreneurial mindset to students

September 2026

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