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BCG's Study Analysis manual (105)

Qualitative Assurance Framework
for the project



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1. Purpose of the document

The Bridging the Creativity Gap (BCG) project aims to create an educational program that bridges the gaps between the skills expected by the creative industry (advertising, branding, visual communications, graphic design, service design, product design, interactive design, UX and UI, ...) and those mastered by recent graduates. This essential connection seeks to empower students with the practical and innovative competencies required to excel in the field. The goal of this document is to delineate a Quality Assurance Framework (QAF) utilised within the Bridging the Creativity Gap project to ensure the

quality at various steps of the project, as well as for the content, materials, and methodologies created for the course produced within the project. Tailored to the objectives and results of the project, the QAF is a strategic tool that provides both a methodology for quality evaluation and a manual for the application of the framework across diverse project components.

Although founded on solid and clear principles, the framework has evolved throughout the project, adapting to the requirements and needs arising from project development. This adaptability has made the QAF a highly flexible tool that ensures quality at all stages of the project.

Expected results. The expected results of this document are twofold. Firstly, it will serve as a comprehensive guide for researchers, VET tutors, consortium partners, and other stakeholders involved in the creation of educational programs, specially targeted to the creative industry, when they require to measure the quality of the program as a whole and of the generated material. Secondly, by outlining the principles, methodologies, and criteria of quality assurance, this document aims to ensure that the BCG project's educational activities, methodologies, and outcomes adhere to the highest scientific and pedagogical standards. In this sense, the framework is designed to align with the overarching goal of the project: fostering innovation and maintaining quality throughout every phase. All in all, the QAF offers a clear pathway for the continual assessment and validation of the project's deliverables.

By detailing the key components, methodologies, evaluation techniques, and applicability, this document serves as a definitive guide to quality assurance within the BCG project, aimed at fostering excellence, innovation, and transferability within other educational programs in the field of creative industry.

Where is the QAF applicable within the Bridging the Creativity Gap project? The QAF is essential in various facets of the project, including but not limited to:

- Ensuring the application of appropriate scientific and pedagogical methods in the rest of Intellectual Outputs of the project
- Guaranteeing quality in the collection and evaluation of data for the different tests, pilots and events carried out during the project
- Assessing the outcomes of educational activities, workshops and training.

Structure of the document. This manual begins with a brief introduction to the project, outlining its goals, timeframe, and justifying the need for the Quality Assurance Framework (QAF). Subsequent sections delve into related work, chosen metrics, methodologies, and data collection processes, as well as assessments for various materials and training activities. The document then continues with evaluations of different training activities, along with a comprehensive evaluation of the course produced. In the

end, the document provides a set of recommendations for stakeholders who are interested in evaluating an educational program within the field of the creative industry.

2. Summary of the project. Need for a Quality Assurance Framework.

The creative sector, encompassing areas such as advertising, visual communications, and design, plays a vital role in societal development, economic growth, and the ongoing evolution of the labour market. This sector's impact is globally recognized, and it stands as a driving force behind economic expansion.

However, a recurring challenge within the sector is the mismatch between the skills taught in educational settings and the competencies required by the creative industry. Research has underscored this discrepancy, with a growing number of experts identifying significant skill gaps that hinder the potential of new talents. This problem has been acknowledged in various European policy documents, such as the "*Digital Education Action Plan*", "*A New Skills Agenda for Europe*" and "*A New European Agenda for Culture*." These reports emphasise the urgent need to align educational programs, whether in vocational or undergraduate settings or lifelong learning courses, with the real demands of an ever-changing creative industry.

Within this context, the Bridging the Creativity Gap (BCG) consortium has united a group of European experts from both the creative industry and academia, specializing in the field of maker culture. The project's initial objectives are fivefold:

1. **Produce a Learning Curriculum:** This will encompass the skills demanded by the creative industry to facilitate successful career development and integration.
2. **Explore a Global-Local Framework:** This aims to align learning content and delivery mechanisms more closely with the creative industry's real-world challenges.
3. **Design, Create, and Validate Interactive OERs:** The project will develop videos, podcasts, and tutorials to specifically address the skills gaps among BCG target groups.
4. **Promote Creative Industry Tutors' Professional Development:** This involves adapting their key competences to new challenges, such as digital and technological innovations.
5. **Showcase, Disseminate, and Replicate Proven Methodologies:** The goal is to strengthen tools and practices within the EU creative VET ecosystem.

To achieve these goals, tasks were divided into different Intellectual Outputs (IOs):

- *IO1*: This phase informs the BCG learning curriculum by exploring the gap between current education (both in vocational and higher education) and the competencies required by the creative sector, such as advertising, design, and visual communications.
- *IO2*: This aims to construct an educational framework consisting of structured principles for capacity building, laying the groundwork for course implementation including educational resources, pedagogical methodologies and assessment criteria.
- *IO3*: This mainly encompasses course material, including Open Educational Resources (OERs), addressing specific key competencies often lacking in existing education programs. Content include videos, podcasts, tutorials in the form of modules and resources divided into lessons and containing industry based challenges.
- *IO4*: This will produce a manual for tutors, offering pedagogical tools, methodologies, and assessment criteria to facilitate the implementation of a course utilising the content produced within the project.

The combined efforts of these intellectual outputs are expected to yield three main results:

1. **Identify Main Skill Gaps:** Determine the primary skills lacking among recent graduates according to industry, academia and students feedback.
2. **Build a flexible educational program which covers those gaps:** Create a dynamic online course that is adaptable to various learning paths. The program is designed to enable independent learning for students who wish to follow the course on their own. Additionally, teachers can utilise the content, methodologies, and activities either partially or in their entirety to craft customised classes. This flexibility allows the material to be integrated into different teaching contexts, thus bridging the identified skill gaps in a more personalised and effective manner.
3. **Integrate Maker Culture Innovations:** Incorporate unique tools, methodologies, and values from maker culture¹ into the course. This will provide students with a different set of tools than the ones taught in the traditional educational programs fostering out-of-the-box thinking and promoting innovation.

In order to validate the various outputs produced within the Bridging the Creativity Gap project, three distinct learning and training activities were strategically organised:

- *Activity 1: identifying the skill gaps.* This activity focused on analysing results from research carried out, aimed at identifying the main skill gaps that exist between

1

<https://www.forbes.com/sites/williamcraig/2015/02/27/what-is-maker-culture-and-how-can-you-put-it-to-work/>

educational training and industry needs. This analysis laid the groundwork for addressing these deficiencies through tailored educational programs.

- *Activity 2: Building learning experiences.* Targeted at educating and building competencies, this activity involved interactive workshops with consortium members. Emphasising principles such as Learning by Doing, Collaborative Learning, Digital Social Innovation, and Immersive STEAM experiences guided by Maker culture, this activity aimed to enable partners to test, provide feedback on, and further refine the content, modules, and activities within the program. The ultimate goal was to align the content with the evolving needs of the creative industry.
- *Activity 3: Bootcamp Training:* The objective of this hands-on training was to offer tutors an immersive opportunity to practise the facilitation methodology and the content prepared during the project with creative students. Comprising a series of mini-trainings and workshops, the bootcamp allowed students to develop the specific skills demanded by the creative industry, utilising the specially prepared material for the course. The outcomes were thoroughly analysed, and based on the results, content and methodologies were reviewed and optimised for effectiveness.

Table 1 summarises the project's various outputs, activities, and meetings. For the project to succeed in providing high-quality outcomes, proper evaluation is essential for the results of each of these milestones

PROJECT TIMETABLE																																					
	SEP 20			JAN21				MAY 21				SEPT 21				JAN 22				MAY 22				SEPT 22				JAN 23				MAY 23				AUG	
	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36	
Project activity*																																					
IO1: Skills Curriculum				M4				M9																													
Activity 1: Identifying skill gaps								M9																													
IO2: Framework																																					
IO3: OERS															M15																						
IO4: Manuals									M9																												
Activity 2: Building learning experiences																																					
Project meeting														M14																							
Project meeting																																					
Activity 3: Bootcamp training																																					
Project meeting																																					
Dissemination event Barcelona																																					
Dissemination event London																																					

Table 1. Project timeframe with main deliverables, activities and meetings.

The Quality Assurance Framework (QAF) outlines the methodologies and metrics necessary to evaluate the results of each event and outcome produced within the project. While Intellectual Outputs (IOs) constitute an essential part of the project, the QAF does not measure their quality explicitly. Instead, it assesses their success and quality by measuring the effectiveness and outputs of various events where the IOs have been wholly or partially applied.

The development of Intellectual Outputs is an iterative process, receiving vital feedback from different activities. Ensuring the success of these activities and guaranteeing

adequate data collection will facilitate valuable feedback to enhance the success of the Intellectual Outputs. Furthermore, all Intellectual Outputs will be encapsulated in the final course (which includes guides for students and teachers), and the QAF will also define criteria and metrics to ensure the long-term quality of such courses.

In summary, the QAF will be utilised to assure success and evaluate the results of:

- The three distinct learning activities.
- The three meetings conducted throughout the project, during which crucial strategic decisions were made.
- The final course, synthesised from the results of the various Intellectual Outputs and events

3. Related work. Metrics to guarantee success.

BCG Quality Assurance Framework is a structured approach to ensuring the quality, effectiveness, and consistency of BCG's different outputs and processes.

Related work in scientific literature: Assessment in creative design courses.

In order to establish the base for BCG assessment framework and evaluation of student's progress, we conducted a systematic literature review to gain a deeper understanding of assessment in the creative design industry. The aim was to determine first, how is the evaluation of creative design courses done according to scientific literature and which are the preferred assessment methods to evaluate the progress of the students. Therefore, we defined two different research questions: (1) How is the assessment of creative design courses done according to literature and (2) Which evaluation methods are used to evaluate students in such courses, according to the literature. Our literature review was conducted using a systematic approach following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. The aim of this methodology was to ensure transparency, replicability, and rigour in the selection and analysis of relevant research articles. We formulated a comprehensive search string that encompassed key terms and concepts relevant to the evaluation and assessment of creative design courses. This search string was consistently applied across four prominent scientific databases: Scopus, Web of Science, ACM, and ProQuest. To maintain focus, we limited our search to articles published between 2006 and 2021, covering a period of 15 years. This time frame ensured that we captured contemporary approaches and developments in the field of creative design education. Our systematic search yielded a total of 1177 journal articles

across the selected databases. After collecting the initial set of articles, we meticulously reviewed each article's abstract to determine its relevance to our research questions and inclusion criteria. Articles that appeared to align with our objectives were retained for further consideration. This process left us with 57 articles, of which one was excluded during the full article screening, as it did not fully meet our inclusion criteria. A summary of this process can be seen in Figure 1.

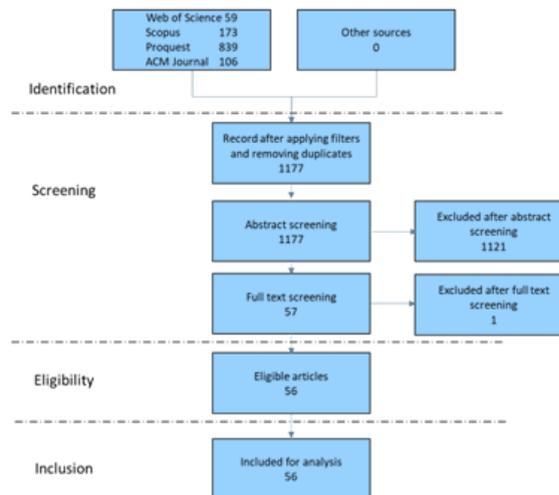


Figure 1. Summary of paper inclusion process

The selected articles were subjected to a comprehensive analysis, wherein we extracted key findings, methodologies, assessment practices, and trends relevant to our research questions. By synthesising these insights, we were able to identify patterns, challenges, and innovative approaches in the evaluation and assessment of creative design courses. We identified a total of 10 different fields within the creative industry. These are listed in Table 2.

Animation	2
Design Education (general)	17
Graphics Design	11
Interior Design	3
Marketing	6
Mechanical, engineering design	1
Product Design	3
Programming	3

Table 2. Creative industry fields

Course evaluation was reported in 20 of the final publications. In those, the evaluation is mainly done through questionnaires, interviews and frameworks. The methodology of utilising custom-designed pre and post questionnaires emerged as a dominant approach for evaluating creative design courses. This method was widely employed across multiple research studies and the central focus of these questionnaires was to establish a correlation between course design and students' performance. The diverse nature of the questions within the questionnaires allowed for a comprehensive assessment of various aspects of the creative design courses. Open-ended and closed-ended questions (e.g. Likert scale questions) were used to gather insights on subjects ranging from skill enhancement and course procedures to motivation, satisfaction, team dynamics, and the integration of multidisciplinary perspectives. Course instructors sought extensive participation from course participants, aiming to collect enough responses that could be subjected to mathematical and statistical analysis. This approach led to the generation of generalised results, forming a benchmark for course effectiveness standards. Additionally, pre- and post-course questionnaires proved valuable for evaluating pedagogical methodologies and learning modules, such as interactive learning modules, thereby providing instructors with insights into effective teaching practices.

Another prominent method that surfaced in the literature review was the utilisation of frameworks for evaluating creative design courses. Among these, the work by (Raspopovic et al., 2014) exemplified the implementation of DeLone and McLean's updated information system model to assess courses taught through both conventional and online approaches. This framework focused on course learning goals and students' performance as key evaluation criteria. Further research explored frameworks that facilitate collaboration between industry-government-academia for the development of creative industries. The application of frameworks offered a structured approach to course evaluation, contributing to a more comprehensive understanding of the effectiveness of creative design courses across various contexts.

Assessing the quality of creative design courses by means of key performance indicators (KPIs) was the option less reported in the literature analysed. These indicators serve as benchmarks for gauging students' satisfaction, their performance within courses or projects, and the overall effectiveness of the educational experience. Just one study reinforced the significance of KPIs in course evaluation. By employing success metrics tailored to each course, instructors were able to analyse and interpret data effectively. This approach contributed to a nuanced understanding of the quality of creative design courses and their impact on students' outcomes.

In summary, the custom-designed questionnaires (pre- and post-) were the most commonly used tool for assessing the effectiveness and quality of creative design courses, followed closely by frameworks, and finally, key performance indicators.

Within the scope of the literature review, student evaluation has been reported with two different roles. On the one hand, many of the publications describe courses with a topic related to any of the creative design fields, and part of the description includes how the students are evaluated. On the other hand, student evaluation is used as a tool to evaluate the course.

After an in-depth review of the publications and a comprehensive analysis, we have summarised the key findings into five distinct points. Additionally, the highlights of these findings are represented in Image 2.

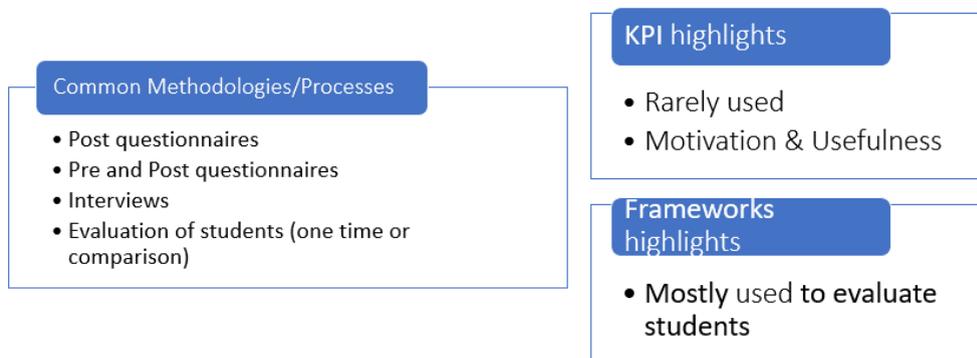


Image 2. Finding's highlights

1. **Major Focus on Student Assessment:** The majority of the journal papers analysed in the literature review were notably oriented toward the evaluation of student performance over evaluation of course performance. These studies tended to emphasise the assessment of individual students' progress, skills, and achievements within creative design courses
2. **Lack of Clear Metrics/KPIs for Course Analysis:** Interestingly, some studies revealed a gap in the availability of clear and well-defined metrics or Key Performance Indicators (KPIs) for conducting comprehensive evaluations of creative design courses. The lack of standardised assessment criteria for analysing course content and structure suggests an area where further research and development could contribute to more effective course evaluations and quality enhancements.
3. **Frameworks Primarily for Student Evaluation:** Frameworks identified in the literature predominantly served as tools for evaluating student performance rather than being explicitly designed for the assessment of course content and structure. This observation highlights a potential opportunity for the exploration and development of frameworks tailored to assessing the broader components of creative design courses beyond individual student achievements.

4. Prevalence of Questionnaires for Students: Among the methodologies utilised for course evaluation, questionnaires administered to students emerged as the most widely employed approach. This indicates the significance of obtaining direct feedback from learners regarding their experiences, satisfaction, and perceptions of course content, teaching methods, and overall educational effectiveness.
5. Students' Results Inform Course Assessment: An overarching trend was the consideration of students' results and achievements as a foundational element in the assessment of creative design courses. The outcomes of student assessments, whether based on assignments, projects, or other forms of evaluation, played, in many publications, a significant role in shaping the overall assessment of course effectiveness and relevance.

The findings and insights obtained from this systematic literature review significantly informed the development of our assessment tool. By leveraging the knowledge and best practices gleaned from the selected articles, we ensured that our assessment tool was grounded in a robust foundation of existing research and industry practices. This alignment with established approaches enhances the credibility, validity, and effectiveness of our tool in assessing creative design courses and students' progress.

Methodologies and metrics to measure meetings/events success.

BCG project is a consortium formed by five different partners placed around Europe. To ensure the project is evolving correctly and the work towards the outcomes is progressing, it is essential to evaluate partnerships along the project life-time. As opposed to evaluating partnership outcomes, partnerships can be assessed regarding its members' relationships. This can improve not only the partnership practice in progress but also test the contribution to outcomes and promote improvement when necessary.

In order to ensure the success of each one of the different activities organised during the course (meetings and educational activities), one of the aspects we took into consideration was partners' perspective on the preparation of the activities and the obtained results. To that end, we asked partners to fill an online survey before and after. Metrics to be analysed are:

- Timely Communication and Clarity
- Alignment and Contribution to Project Goals
- Roles, Contributions, and Participation
- Preparation and Execution
- Communication and Interaction
- Satisfaction and Expectations
- Open Feedback and Improvement Suggestions

Methodologies to ensure quality when identifying skills gaps (Activity 1).

To identify the skills that needs to be included in the curriculum BCG followed a 4-step methodology:

- Literature review: What skills have been identified as critical for the creative industry?
- Survey: What skills industry experts consider essential, and are lacking in recent graduates?
- Focus group discussion with different stakeholders: Why are those skills not covered in formal education and how can they be integrated in a curriculum?
- Workshop analysing results: What are the important aspects to be included in the curriculum.

The result of this activity is a set of main skills and related sub-skills that must be included in the BCG curriculum.

Methodologies and metrics to ensure quality when building learning experience (Activity 2).

Project staff participates in 4 different Maker workshops providing feedback at the end of the session using a reflection Canvas with 6 different questions with the goal of analysing the following metrics:

- Goal Alignment: Assessing the compatibility of the workshop with BCG's overarching objectives.
- Improvement Areas: Analysing perspectives on what to keep, increase, decrease, stop, or start doing in the workshop so it support better BCGs requirements
- Skills Engagement: Identifying the specific skills targeted and engaged with during the workshop.
- Facilitator Dependence: Evaluating the need for a facilitator's guidance and explanation during the activity.
- Platform Integration: Exploring the potential for integrating the activity into BCG's online platform and the preferred multimedia format.

The result of this activity is a specific proposal to integrate Maker workshops into the BCG course content.

Methodologies and metrics to ensure quality in Course Bootcamp(Activity 3).

- Summarize

Methodologies and metrics to measure success in the final course.

A constant evaluation of the course must be carried out. To that end students participating in the course, teachers utilising the course material and industry experts proposing this course to the staff will take a survey. The surveys will track following metrics:

For students:

- Percentage of students showing an increase in confidence levels post-course.
- Number of students who felt more prepared for real-world challenges after completing the course.
- Changes in students' self-assessed understanding of core concepts from start to finish, with special focus in the three core skills.
- Perceived quality of the course.
- Percentage of students who feel the course will positively impact their career journey.
- Most and least valuable modules as perceived by students.
- Percentage of students able to name and detail at least two new methodologies or techniques they found valuable.
- Number of students who believe they can integrate prototyping and making into their daily tasks.

For teachers:

- Percentage of educators who find the course material relevant to real-world scenarios.
- Number of educators willing to incorporate course content into their teaching.
- Educators' assessment of the course's utility in fostering strategic thinking, understanding the industry process, and instilling an entrepreneurial mindset.

For industry experts:

- Percentage of industry professionals who believe the course prepares students for real-world challenges.
- Number of industry representatives willing to encourage employee enrollment or consider corporate purchases of the course.
- Professionals' assessment of the course's relevance to industry scenarios and trends.

4. Ensuring quality along the project meetings and educational activities. Methodology and results.

As presented in [section 2](#) (see also [Table 1](#)), three different transnational meetings and three different learning activities were organised during the project. The transnational meetings aided in defining strategic decisions. During these meetings, all partners joined together to assess the status of the project, decide on urgent/important action points, and define and clarify the project roadmap for the following months. These meetings were vital to ensure that all partners had a common understanding of the project goals, next steps, task results, responsibilities, and resource allocations. The educational activities, on the other hand, contributed to the preparation of material for the course (including content, OERs, pedagogical methodologies, assessment guidelines, etc.) and served to test the different activities and guidelines in real-life scenarios. The success of the educational activities depended on adequate preparation by the partners, requiring a common understanding of roles, task distribution, and shared goals.

The execution and evaluation of project meetings as well as the educational activities, are pivotal to the overall success of the Bridging the Creativity Gap (BCG) project. As the project progressed, various stages required meticulous planning, execution, and assessment to ensure that the expected outcomes of each one of the meetings and educational activities were aligned with the objectives of the project.

The methodology employed to guarantee quality throughout the project meetings and events was both rigorous and adaptive. First and foremost, a structured planning phase was put in place, outlining the goals and expected outcomes of each meeting and educational activities. This included the definition of clear objectives, participants' roles, timelines, and success criteria. During the execution phase, adherence to the plan was monitored closely, and regular feedback was collected from all participants to identify any areas for improvement. This continuous monitoring allowed for real-time adjustments, ensuring that each stage of the project remained on course.

After the execution phase, a comprehensive assessment was conducted using both quantitative and qualitative metrics. Assessments methodologies were selected case-by-case given the nature of the activity and the expected results. The assessment took into consideration the alignment of the activities with the overall project goals, as well as their contribution to the development and refinement of the Intellectual Outputs. The assessment contributed to adjusting the roadmap of the project, making necessary adjustments and modifications in the intellectual outputs. By integrating a well-defined

methodology with ongoing assessment, the quality assurance process provided a solid foundation for project success.

Each educational activity has had its own success metrics, as well as adequate methodologies to measure those metrics. These also included guidelines to guide the execution of each activity in scientific and pedagogical terms, aligning it with the objectives of the project. The guidelines also ensure that the data collection and evaluation processes follow the quality criteria required by the scientific community and pursue high pedagogical standards. Specifics for these will be defined in sections 5 - 7, separately for each of the educational activities.

Success in both educational activities and transnational meetings relies on ensuring that all partners have a clear understanding of the tasks they must execute before the event and their respective roles within the event. This is necessary to ensure that the event runs smoothly and that the results meet the minimum quality required for the success of the project. In order to ensure the success of both types of events the QAF defines the following methodologies, data collection methods and metrics.

Methodology and metrics: In order to verify common agreement among partners related to the roles and tasks of each individual partner in the activity, and corroborate that all partners agree on the success and quality of the output of the activity, an online survey was sent to partners approximately three days before and three days after the activity. The survey consisted of 11 statements in the form of a Likert-scale for the pre-event survey, and 13 statements also using Likert-scale questions and an open-ended question asking about any thoughts related to the schedule, content, and preparation of the event (pre-event survey) and schedule, content, and dynamics of the event after the meeting. The post-event survey included a few additional open-ended questions aimed at collecting partners' perspectives on the outputs of the meeting as well as aspects to be improved. [Appendix 1](#) presents the survey sent to all partners. Each individual participating in the project was sent by email an URL to fill the form.

With the survey questions we wanted to analyse the following metrics:

- **Timely Communication and Clarity:**
 - Pre-meeting information sent on time (Pre)
 - Clarity in schedule, agenda, and goals (Pre)
 - Activities and tasks executed as scheduled (Post)
 - Clear goals defined for activities (Post)
- **Alignment and Contribution to Project Goals:**
 - Alignment of proposed activities with project goals (Pre)
 - Meeting's contribution to achieving project goals (Post)

- Results in line with consortium agreement (Pre & Post)
- **Roles, Contributions, and Participation:**
 - Clarity of roles and expected contributions (Pre)
 - All partners participated as expected (Post)
 - Consideration of partners' opinions in planning and during the meeting (Pre & Post)
- **Preparation and Execution:**
 - Adequate information for meeting preparation (Pre)
 - Activities produced expected outputs and met goals (Post)
 - Action points and tasks defined for all partners (Post)
- **Communication and Interaction:**
 - Fluent communication within the meeting (Post)
 - Active participation and contribution by all partners (Post)
- **Satisfaction and Expectations:**
 - Meeting met expectations (Post)
- **Open Feedback and Improvement Suggestions:**
 - Thoughts related to schedule, content, preparation (Pre & Post)
 - Thoughts related to meeting outputs and aspects to be improved or implemented differently (Post)
 - General open feedback (Post)

Results: The average response rate (total answers / participants) was 57%. The results were analysed after each event and reported to the rest of the partners in the following online meeting. It is worth emphasising that the open-ended questions were not used by survey respondents at all. All the aspects of the open-ended questions were discussed later during partners' periodical online meetings.

The pre-activity survey helped to correct some minor aspects in the project preparation. The results of some of the activity surveys indicated that somehow the information about the whole event (goals, schedule, activities...) should be conveyed more clearly, with adequate detail and in a timely manner. However, the results of the pre-activity survey did not reveal any major problems. Even the reported problem concerning the information about the event was mentioned occasionally and by a small number of participants, who actually did not report it as a significant concern. On the other hand, the post-activity surveys did not identify any problems during any of the activities. This indication that both the transnational meetings and the educational activities met participant expectations and results were in line with the goals of the project.

5. Capturing course requirements. Methodologies and results.

In order to gain a deeper understanding of the real gaps that must be addressed in the BCG course, with a special focus on the industry perspective, but without forgetting other stakeholders such as teachers (both in Vocational and Higher Education) and students, we followed a 4-step methodology:

1. Conduct a *literature review* to identify the main topics related to the creative industry that require further analysis.
2. Distribute a *survey* to creative industry experts in order to prioritise the previously identified topics.
3. After identifying the topics, organise a *focus group discussion* with different stakeholders related to the creative industry: vocational and higher education teachers, students, and industry experts. The goal of the focus group is to understand within the chosen topics the aspects that are most relevant and require special attention.
4. Analyse the results using *thematic analysis* and *affinity diagramming*. Subsequently, through various *collaborative workshop sessions* including *structured group discussions* among partners, identify the skills that need to be emphasised in the BCG course curriculum and capture the course requirements.

The main objective of the whole process is to identify the skill gaps that are most relevant for the industry and to gain insights into how education programs can better prepare students for a career in the creative industry.

Step 1. Literature review

The literature review served as a critical foundational step in the BCG project, aiming to identify and assess the current skill gaps in the creative industry. While this review was part of a previous research effort carried out by one of the partners and lies outside the scope of the present document, its results are integral to the methodology of this section and are included for their relevance. This comprehensive review delved into various scholarly articles, industry reports, and academic publications to ascertain the state of the creative industry and the existing challenges faced by professionals in the field. The analysis of the literature identified the following eight specific topics as current skill gaps in the industry:

- Collaboration: Working in multidisciplinary teams and forging productive collaborations.
- Making a Prototype: Strategies for testing ideas rapidly and learning from failure.
- Strategy/Critical Reflection: Techniques for challenging and advancing new ideas.

- Understanding Industry Processes - Insight into professional creative processes, from conceptualization to execution.
- Principles for Using Technology: Leveraging technology effectively to support creative objectives. Make technology work for you and not for itself
- Entrepreneurial Mindset: Cultivating the ability to sell new ideas and create opportunities.
- Audience Engagement: Methods for discovering universal truths and recognizing cultural relevance.
- Purpose and Profit: Balancing ethical considerations with the practical realities of working in a for-profit industry.

These identified gaps served as the basis for further investigation and analysis, guiding the subsequent steps in the project's methodology and shaping the overall approach to capturing course requirements.

Step 2. Survey

Based on the insights gleaned from the literature review, an online survey was prepared, targeting industrial experts (See Appendix 2, Survey). The objective of the survey was to prioritise the topics identified through the literature review, explore the possibility of uncovering new subjects, and select 3 or 4 topics for further research.

The survey was disseminated to a diverse group of over 2500 professionals across the creative industry in Europe, encompassing areas such as branding, advertising, product design, visual communication, interactive design, UX, and UI. Participants were carefully chosen based on their extensive experience (several years of experience) and in-depth knowledge in the creative industry.

Out of the 2500 professionals invited, responses were received from **69 individuals**. The majority of these respondents were based in the United Kingdom and Finland, with smaller percentages in France, Germany, Slovenia, and Spain. A few responses were also recorded from the United States, the United Arab Emirates, and Denmark.

Respondents' work environments were varied, with 34 indicating employment in creative agencies or studios, and 16 working for brands as part of an in-house creative team. Others identified as freelancers, studio owners, or university lecturers. In terms of creative disciplines, advertising and branding were prominently represented at 64% and 48%, respectively. Graphic design and visual communication were also popular, noted by 46% and 33% of the respondents. The survey included participants holding various job titles, with Executive Creative Director, Creative Director, and Senior Copywriter being the most commonly cited. A significant majority of participants (83%) played a role in hiring new talents, further illustrating the survey's reach within influential sectors of the industry.

Figure 3 illustrates the perceived importance of the different topics. **Strategy and critical reflection** emerged as a significant skill gap with a 71% response rate emphasising the need of creative professionals to think critically about their work and develop effective strategies to achieve their goals. **Understanding industry processes**, which received a 48% response rate, was also identified as an important skill gap that requires attention. Comprehending the inner workings of the industry enables creative experts to navigate the various complexities of the industry, allowing them to identify areas of inefficiency and roadblocks as well as manage client expectations. The **entrepreneurial mindset** is another crucial skill gap noted in the survey, with 40.6% of respondents emphasising its importance. Creative professionals need to be able to identify opportunities, take risks, and create value in the market. Additionally, both **Audience engagement** and **purpose and profit** (both with 34.8%) were highlighted as significant skill gaps that warrant attention in creative education. The ability to engage with audiences and deliver work with a sense of purpose while generating profit is essential for success in the creative field. Other skills identified as important but not as crucial as the previous ones for the success of a young professional are Collaboration and Principles of using Technology, with 30.4% and 24.6% of the respondents considering them as important topics.

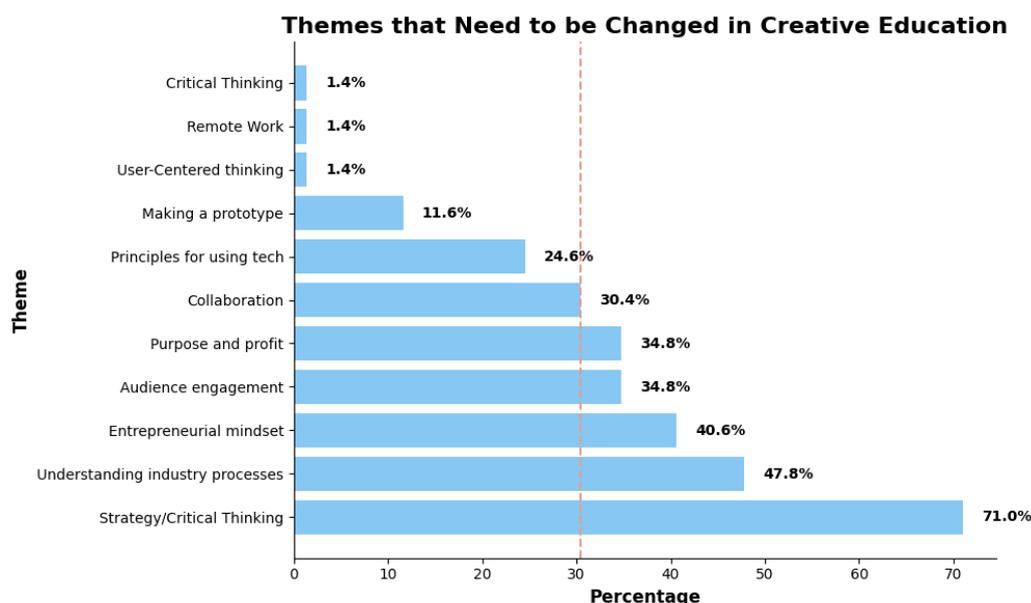


Figure 3. Main skill gaps identified in new talents in the creative industry

The qualitative data from the poll emphasised the necessity of various areas that must be addressed in creative education to better prepare emerging creatives for success in the industry. Among these areas, increasing diversity, promoting inclusivity and equality in creative work, and the development of soft skills like negotiation and teamwork were highly emphasised.

Additionally, respondents pointed out that students must cultivate collaboration, people management, and leadership skills. Further, the survey participants stressed the importance of students setting realistic expectations and effectively communicating their ideas to clients. They must understand the difference between an idea and a final product, and develop productive and efficient creative processes. The respondents also underscored the significance of thinking big, having a broad-minded approach in strategy and critical reflection, and nurturing curiosity. One critical theme was that students must be taught to recognize the broader context in which they will work and how they can make a systemic difference in the world.

Step 3. Focus Group discussion.

In order to delve deeper into the understanding of the educational status quo in the most relevant areas highlighted in the survey, namely: *entrepreneurial mindset*, *understanding the industry process*, and *strategic and critical thinking*, a focus group discussion was organised, bringing together three distinct groups: university teachers and tutors, last year students of degrees related to the creative industry (including also recent graduates), and creative industry professionals. The goal of these focus group discussions was to explore in more depth the critical skills that the industry needs but finds lacking in recent graduates, to identify why those gaps occurred, to determine what additional skills are needed to cover those gaps, and to explore how those skills could be better taught to students before and after they have graduated.

Data collection. The study was conducted through seven online sessions, approximately an hour each, using Zoom and supported by Miro² for collaborative brainstorming and interactive discussions. The focus group discussion was completely structured and facilitated by the BCG project staff. In different phases of the focus group, participants were divided into smaller discussion groups, always facilitated by one expert from the project staff.

The first and second sessions were conducted exclusively with eight creative industry experts from Germany, Spain, UK and Slovenia. The third and fourth session, the sole focus was on eighteen university teachers and tutors from Germany, Spain, UK and Finland. The fifth and sixth sessions centred on 13 recent graduates in the field of the creative industry from Germany, UK, Slovenia, and Spain.

Each group's isolated focus group session ensured that their unique experiences and perspectives could be shared, discussed, and thoroughly understood without the influence of the other groups' viewpoints, thereby enabling a more authentic and nuanced collection of insights.

² Miro (<https://miro.com/>) is an online collaboration platform that enables the collaborative creation of virtual post-it notes including multimedia content

Finally, in the seventh session, 10 students, industry experts, and tutors were brought together with the aim of exploring how to consolidate previous findings by gathering opinions from one group to others.

Focus Group structure. Each session was structured around three main topics correlating with the key skills under investigation: Strategic and critical thinking, understanding the industry process, and entrepreneurial mindset. Each group followed a *structured discussion with guiding questions* intended to elicit profound and insightful insights about the state of education in the creative industry and the essential skills for success. The structure of the focus group discussions was divided into three meticulously planned phases: a warm-up phase, a phase for understanding the challenge, and a final phase for exploring opportunities.

Warm-up phase: This initial phase served to initiate conversation and set the stage for the in-depth discussions that followed. Each participant was asked to share their recommendations for recent graduates, drawing from their own experiences, perspectives, and general advice on the transition from academia to the creative industry.

Understanding the Challenge Phase: The warm-up was followed by a division of the participants into three separate focus groups, each centred on one of the subject areas: Strategic and Critical Thinking, Understanding the Industry Process, and Entrepreneurial Mindset. Each focus group was facilitated by a moderator and guided by a distinct set of questions tailored to their group's perspective and experience - be it as teachers, recent graduates, or industry experts. The differentiation in guiding questions was based on the role and expertise of the participants:

- For tutors and teachers, the focus was on the main skills covered by each subject, relevance, academic coverage, and teaching challenges of each subject.
- Recent graduates reflected on their experiences, learning sources, and areas where they felt less confident. For instance, there was a strong focus on the sources from which necessary skills were acquired.
- Experts identified the necessary skills, the current gaps, and the evaluation methods for recent graduates. Additionally, they discussed their techniques for analysing the skills of recent graduates during the hiring process.

Exploring the Opportunity Phase: The final phase of the session involved the participants, once again divided into smaller groups, discussing opportunities and innovative approaches to the challenges identified previously. The guiding questions for this phase, while still tailored to the unique perspectives of the group, encouraged forward-thinking and ideation around how the identified skills gaps could be effectively addressed.

In all phases, the participants were encouraged to write their own ideas in a Miro board, and after that the facilitator enabled a discussion based on the notes created by the participants.

This methodological approach ensured a comprehensive understanding of the existing challenges and fostered collaborative thinking for actionable solutions and contributed to the elaboration of the learning goals or target skills to be included in the curriculum.

Focus group preparation. Facilitators were provided with a set of instructions ([Appendix 2](#). Facilitator instructions and guiding questions) including a scheduling with approximate time for each phase. They were also given the key questions to cover in each phase and the Miro board to work with the participants. Link to board was shared with participants during the Zoom meeting.

Outputs. All discussions were recorded for being later analysed. Each focus group worked in a separated Miro space that was retrieved for later analysis. During the sessions or at the end of the session the facilitators included some notes with aspects that need to be taken into consideration, including their own insights, and identified red flags (if any).

Step 4. Analysis of results in collaborative workshops.

Both the videos and the Miro board obtained in all the focus groups were analysed by experts among the partners staff. The results were analysed using different *qualitative analysis strategies*.

Methodology: The analysis was organised in an online 3 workshop sessions.

- Session 1.
 - *Familiarisation:* Each participant became familiar with the material, especially with the Miro board, on an individual basis.
 - *Thematic Analysis:* Together, using thematic analysis and affinity diagramming, data were structured.
 - *Reflective Process:* Using reflective practices and critical examination, participants extracted initial conclusions and defined aspects that needed to be studied in more detail. This stage fostered a deeper understanding of the underlying patterns and connections within the data, highlighting areas that might warrant further exploration.
- Session 2: This session was organised around the analysis of three target skills: *entrepreneurial mindset*, *understanding the industry process*, and *strategic and critical thinking*. The methodology was divided into a 4-stage *reflective and collaborative* process, designed to facilitate deep exploration and assessment of each skill:
 - *Understanding the challenges:* Participants are instructed to identify and articulate the main challenges in teaching these skills. Questions

were posed to guide reflection, such as, "Why is there a gap when teaching this skill?"

- *Exploring opportunities*: Participants are guided through a process of exploring methods, techniques, and approaches for teaching these skills.
- *Necessary skills*: The discussion is structured to identify related skills needed to enhance the core target skills. Participants used both fundamental and complementary abilities as a framework to find associated skills
- *Assessing success*: Participants engage in an exploration of how to assess if students have met and achieved their goals. This involved a review of existing evaluation techniques, potential new approaches, and criteria for measuring success

This structured approach was intended to foster thoughtful analysis and creativity, providing participants with the tools to approach each skill from multiple angles. The focus on reflection, exploration, identification, and assessment was designed to create a comprehensive and actionable understanding of the teaching and evaluation of each target skill.

- Session 3: The purpose of this session was twofold, and it was carefully structured around two primary objectives.
 - *Selection of Related Skills*: Participants were engaged in collaborative discussion and reflection to identify the necessary related skills associated with each core skill (entrepreneurial mindset, understanding the industry process, and strategic and critical thinking) that must be included in the final curriculum
 - *Brainstorming Challenges and Activities*: This part of the session was aimed at conceptualising possible challenges and activities that could demonstrate proficiency in both individual core skills and the combination of the three core skills. Participants were guided through a facilitated brainstorming process to generate diverse ideas for challenges and/or activities.

Results

The collected insights offer a robust framework from which to extract the essential competencies that the creative industry demands of future professionals. Through an analytical exploration of views within the realms of *Strategy and Critical Reflection*, *Entrepreneurial Mindset*, and *Understanding the Industry*, the intention is to define an all-encompassing skillset that synergizes theoretical knowledge with hands-on requirements.

Strategic and Critical Thinking. A significant theme was the importance of expansive and innovative thinking. Participants underscored the need to comprehend design and creativity within a vast context, appreciating its connection with societal aspects.

Emphasis was placed on curiosity and the ability to see how creative efforts fit into the broader world. An urgent requirement identified was for students to understand the global context of their work and realise their potential in shaping communication and operational landscapes. The importance of understanding client needs, audience demands, and strategic thinking to push creative boundaries was highlighted. Cultivating the skill to evaluate ideas critically and learn from feedback was recognized as essential.

In sum, the consensus was clear on thinking expansively but also being aware of industry expectations and learning from failures. These principles are vital for the strategic and critical reflection moving forward, bridging the educational and professional realms.

Understanding the Industrial Process. A broad skill set that transcends technical aspects of the field is necessary. There was a call for an in-depth understanding of the industrial processes, collaboration, and real-world constraints. Emphasising financial literacy and insights into industry economics were identified as crucial areas where increased attention is needed.

A complex transition from academia to industry was acknowledged, highlighting the need for education about securing work, team collaboration, and embracing failure. These core elements should be ingrained in educational programs to better equip students for professional life.

Entrepreneurial Mindset. A delicate balance between creative freedom and business understanding was identified. Professionals underscored the importance of devising solutions that harmonise the needs of users with business objectives. This suggests a call for graduates to be versed not only in artistic expression and originality but also in the fundamental mechanics of business, including financial, legal, ethical, risk, compliance, marketing, and innovation aspects.

The ability to pitch ideas effectively, understanding the client's specific needs, and aligning with their business goals was deemed essential. The discussions revealed a gap between educational systems and industry expectations, underscoring the need for graduates to grasp how the industry functions and to innovate within those boundaries.

Summarising, experts identified the development areas for each one of the topical subjects or skills based on the results of the focus group discussion.

SUBJECT	DEVELOPMENT AREAS
Strategy and critical thinking	Thinking Big
	Broad Mindedness
	Critical and Creative Thinking
	Understanding Design in Context
	Embracing and Learning from Feedback
Understanding the industry process	Understanding financial aspects
	Knowledge on industry-specific terminology, roles and workplace habits
	Presenting Ideas and Responding to Feedback
	Working within Real World Constraints
	Building a Diverse Portfolio
	Transition to Professional Practice
Entrepreneurial mindset	Balancing Creativity and Business Understanding
	Selling Work and Ideas Face to Face
	Understanding Business Fundamentals
	Navigating the Complexity of Creative Industry
	Balancing Creativity and Business Understanding

Table 3. Identified development areas

In addition, the analysis of related skills brought the following set of related skills that should be included in the BCG curriculum (see Table 4).

Strategy and critical reflection			
Strategic thinking	Understanding audience	Interpretation of the brief	Working for a client
Critical thinking and reflection	Stepping out of comfort zone	Deeper into the subject area	Challenging your bias
Confidence to make mistakes	Building argument	Defend and justify decision making	Confidence in having opinion
Understanding the Industry processes			
Understanding of company structure	Terminology and presentation formats	Collaboration skills	Presentation and speaking skills
Emotional intelligence	Management and	Build collaborative	Team mentality

	financial literacy	relationships	
Having a vision	Communication skills		
Entrepreneurial mindset			
Business literacy	Understanding your purpose and values	Be a good mentee	Resilience
Recover from mistakes	Risk assessment	Personal branding	Resourcefulness; desire to learn
Inquisitiveness	Leave comfort zone	Face new challenges	

Table 4. Related skills associated to the three topical skills

The <whitepaper>³ provide more information about the focus group analysis, including separate results for each one of the three stakeholders participating (teachers, students and industry experts). In addition, such document provides a more detailed definition for each one of the skills

6. Evaluation of Training Activity 2. Methodologies and results.

One of the distinctive features of the BCG project lies in infusing creative industry education with novel perspectives, drawing on expert insights and pioneering advances in pedagogical approaches. Central to the BCG's mission is the integration of practices and activities from maker culture into this educational landscape, breathing new life into traditional teaching techniques. Introducing the maker mindset to recent graduates facilitates the development of a wide set of skills that can enhance creativity, expand their creative horizons, and encourage innovative, out-of-the-box thinking. The maker mindset serves as a versatile toolkit, fostering the growth of essential skills, particularly in *Entrepreneurial Mindset* and *Strategic and Critical Reflection* subjects.

Maker Culture is a contemporary movement, started at the beginning of the millennium, that embraces do-it-yourself (DIY) and do-it-with-others (DIWO). Maker culture highlights the creation, invention, and exploration of technology, crafting, and other forms of hands-on design and manufacturing. Often grounded in collaborative and community-oriented spaces known as makerspaces, Maker Culture encourages individuals to develop practical skills, work on personal and group projects, and share tools and expertise. Maker culture aims to imbue the *Maker mindset* in all its practitioners. Maker

³ Add link when ready

mindset promotes a growth-oriented approach where curiosity, experimentation, and problem-solving are at the forefront. Individuals with a Maker Mindset are open to failure as a learning opportunity, constantly seeking to iterate and improve on their projects. They embrace collaboration, sharing ideas, and learning from others within a community of like-minded creators. The Maker Mindset is not confined to any particular set of tools or technologies; rather, it's about a willingness to engage with the world in a hands-on, experimental way, seeing opportunities for creativity in everything, and taking the initiative to build, tinker, and innovate. It's a mindset that fosters resilience, adaptability, and a deep connection to the creative process, and it can be applied in various contexts, from education and business to personal development. Maker Mindset is in line with BCG's mission to foster innovation, critical thinking, and entrepreneurial acumen in creative industry education. It brings a tangible approach to learning, allowing graduates to expand their creative horizons and think outside conventional boundaries. In particular, the adaptability and resilience inherent in the Maker Mindset resonate with the BCG's focus on Entrepreneurial Mindset and Strategic and Critical Reflection subjects.

Maker culture incorporates a wide set of technologies and processes, always trying to blend cutting-edge technologies with traditional crafts. Among them are digital fabrication (e.g. 3d printing, laser cutting, CNC machining), robotics, electronics and programming.

The maker aspect of this mindset is deeply rooted in the act of creation, of bringing ideas to life, whether it's a digital solution, or a groundbreaking advertising campaign. This goes beyond mere ideation; it's about execution and the ability to transform abstract concepts into tangible realities. In essence, fostering a maker mindset in young talents ensures that they are not only creators but also innovators and leaders, ready to steer the creative industry into its next chapter.

With the objective of aligning maker processes with the identified skills essential to the BCG project, this training will investigate four distinct workshops typically designed for makers. The examination will first assess whether these workshops align with the project's goals, and then identify the specific skills that each individual workshop promotes. This inquiry reflects the broader commitment to integrating the maker mindset into creative industry education, ensuring a more dynamic, hands-on, and innovative approach to learning and development.

Workshops dynamics

Workshop 1. Atlas of Weak Signals. This activity is mainly focused to promote collective reflection and exploration of a set of random topics. Facilitating idea generation, it steers participants beyond conventional thinking patterns. It uniquely enables participants to delve into anticipated futures under structured guidance, ensuring insights are both expansive and aligned.

The Atlas of the Weak Signals (AoWS) is a toolkit designed by Mariana Quintero from IAAC Fab Lab Barcelona, transforming the research of weak signals (indicator to identify a change in the future with little or no impact on the present, but with the potential to lead to the identification of major impact events.) into a practical space to navigate and understand possible emerging scenarios based on underlying trends in our current world. It is an exercise that facilitates seeking opportunities, threats, challenges and shared visions for innovation, policymaking, intervention, research and business opportunities in the future. AoWS provides a space and structure for creative students to move and position themselves in the complex panorama of our present and to combat future challenges by creating opportunities for design interventions.

The Atlas of Weak Signals methodology can be used by the creative industry and young talents in several ways to help increase and improve its strategic planning:

- Anticipate emerging trends
- Identify new opportunities
- Foster collaboration
- Build resilience

This activity offers a design space for the Atlas of Weak signals. The design space can be physical (elements are provided in a card deck) or virtual (all elements are provided in an interactive Miro board⁴). In this activity the online version was used since some participants were working online. In any case the design space is summarised in Figure 4.

⁴ <https://miro.com/app/board/uXjVOInrjBI=>

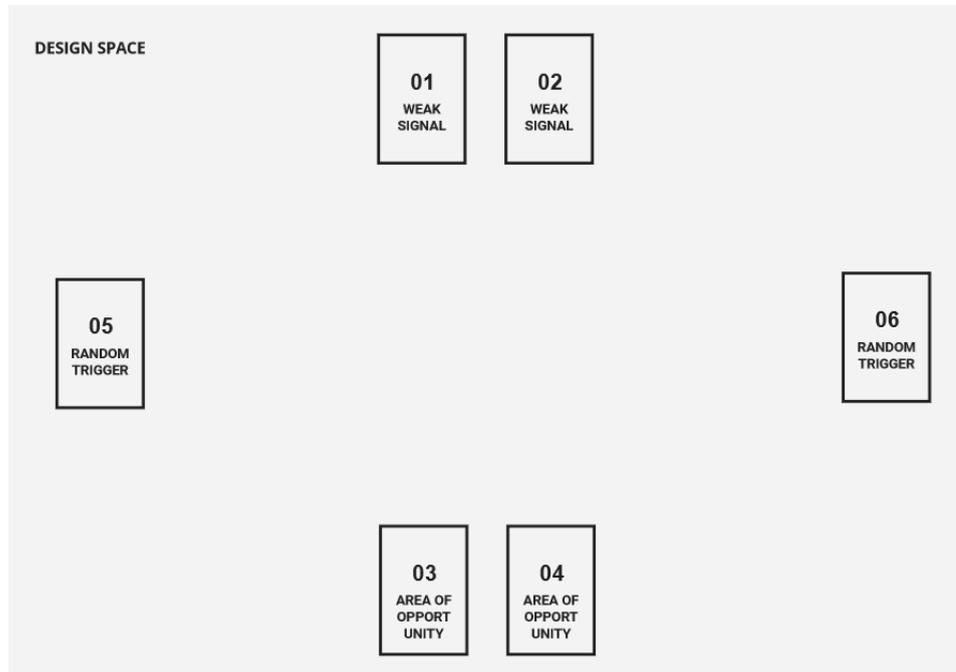
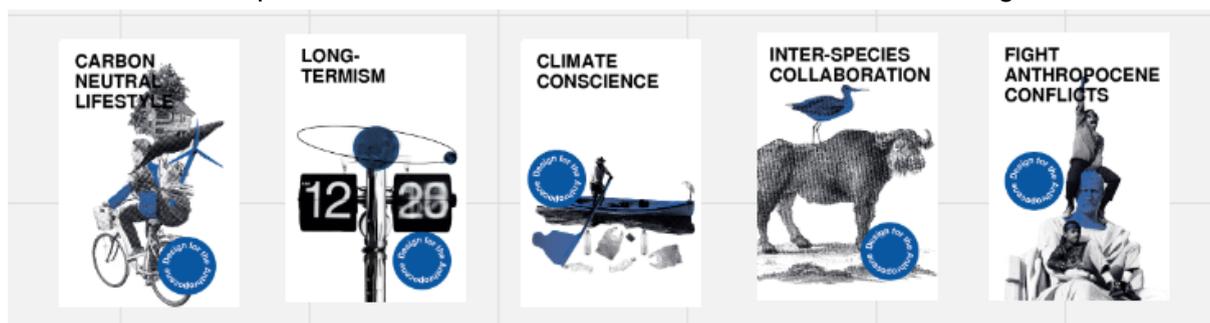


Figure 4. Atlas of weak signals design space

Steps to carry out this activity are presented to participants as follows:

1. Select randomly two weak signal cards (See Figure 5 for some examples of weak signals) and reflect about them: What do they mean for you? What do you think they are?. Participants can find additional information and share their thoughts with others.



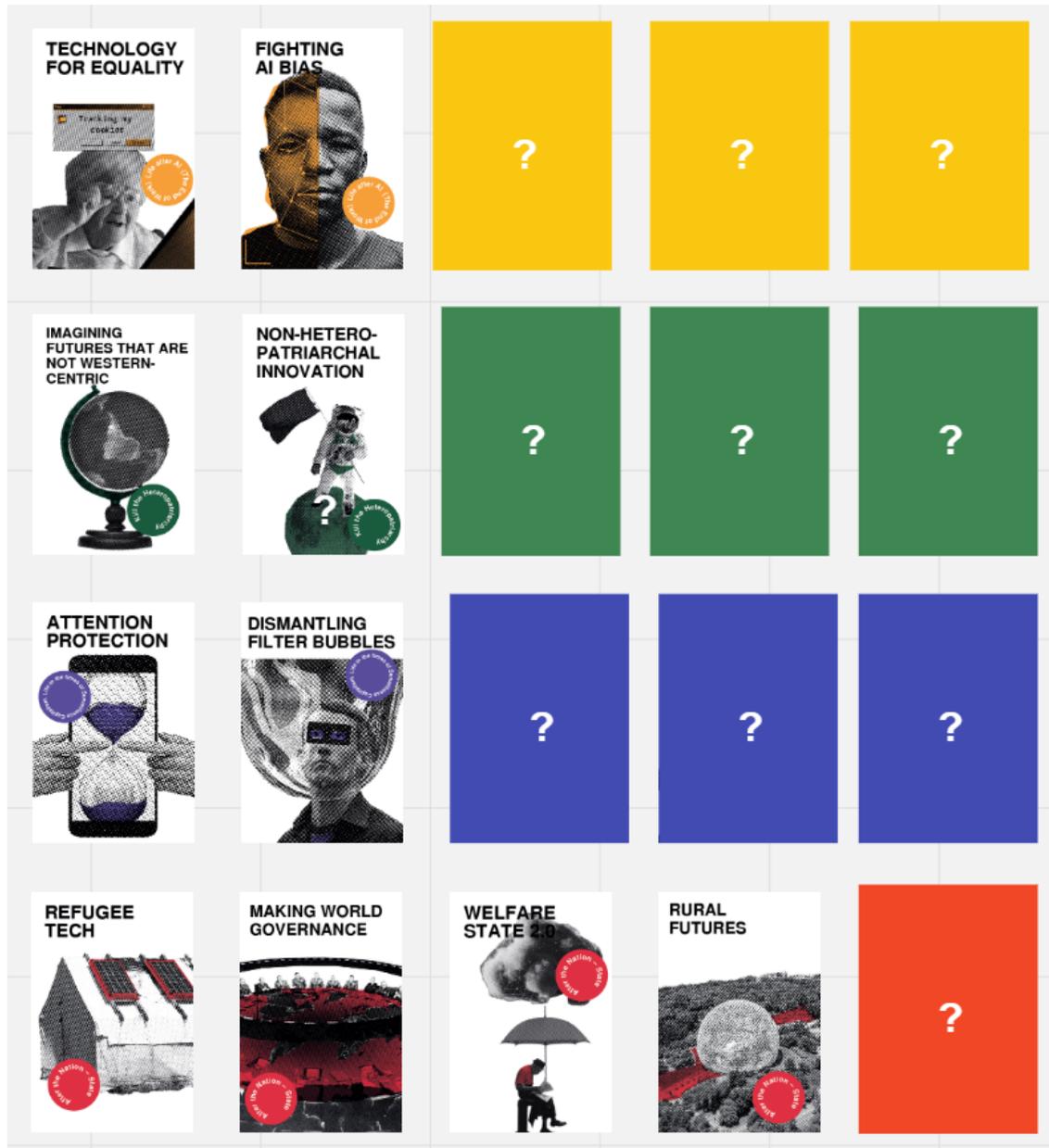


Figure 5. Some example of Weak signal cards belonging to following categories: Design for anthropocene (Blue) Life After AI (yellow), Kill the heteropatriarchy (green), Life in the times of Surveillance Capitalism (violet) and After the nation state (Red)

- Choose randomly two cards from the Areas of Opportunities deck. Areas of opportunities represent emergent technologies, ideas and transitional systems. Participants must reflect on possible interconnections and opportunities arising from using these cards on the previous chosen weak signal.

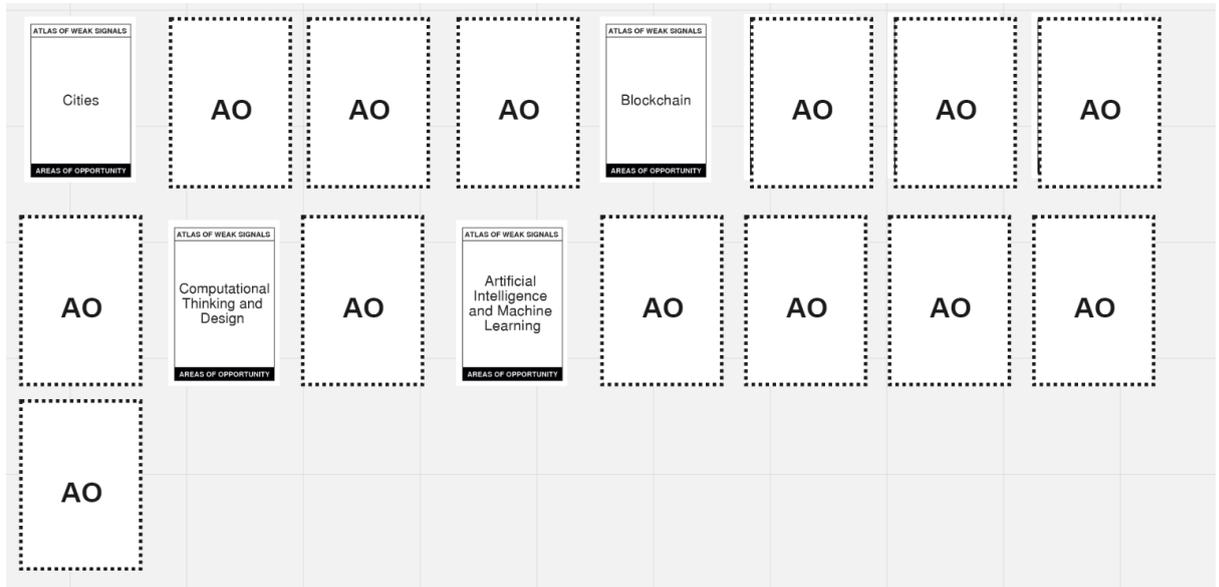


Figure 6. Deck with some areas of opportunities shown. It includes cities, blockchain, Computational Thinking and Design and Artificial intelligence.

3. Choose two random trigger cards. These cards are fields of research or new concepts (Fig 7) about the topic participants are discussing. They will help to find new opportunities participants might not come up with before.
4. Integrate everything together and come up with new emergent scenarios for the future that might help in the ideation process.

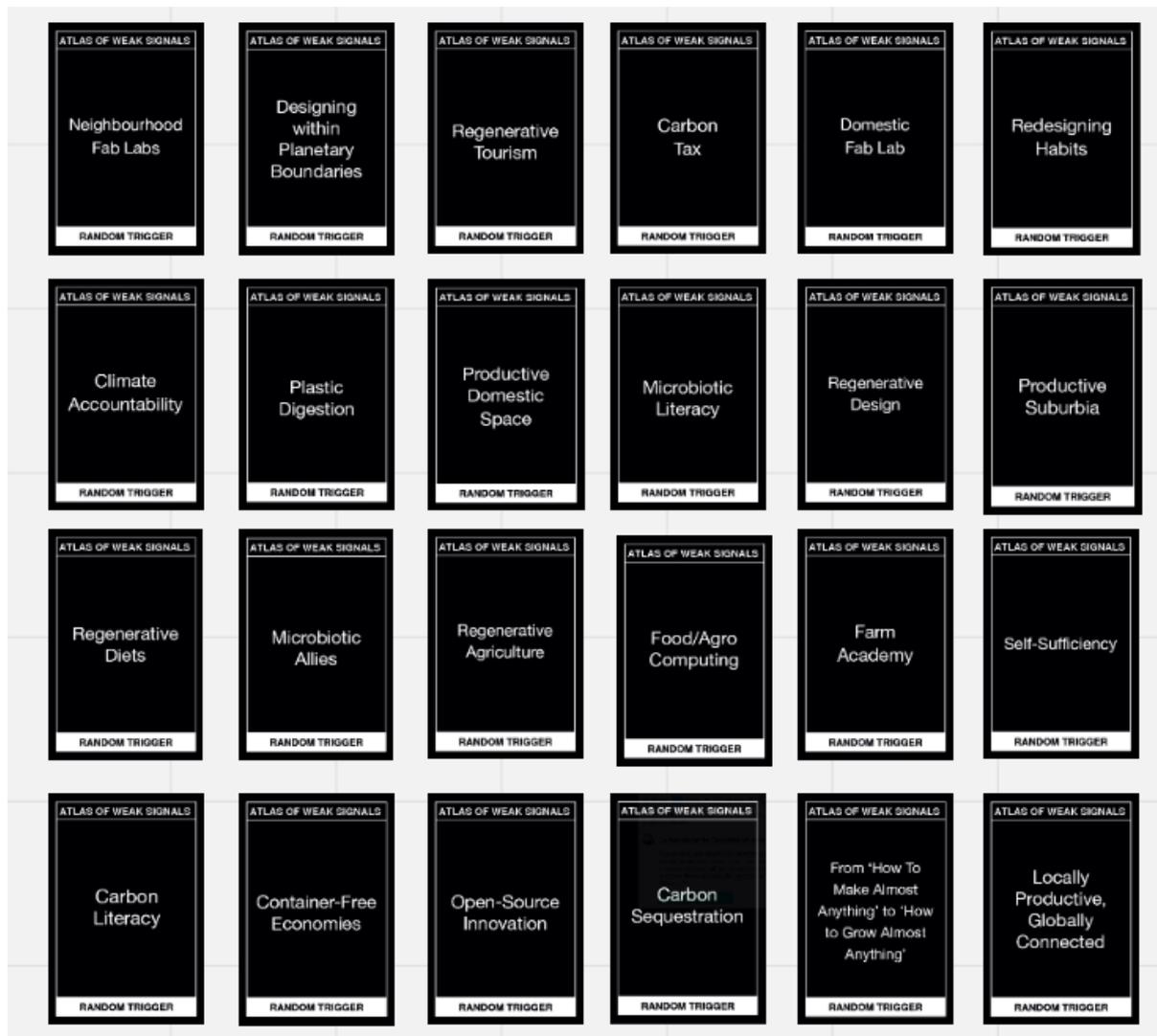


Figure 7. Deck containing some triggers.

Workshop 2. Jobs of the future. Positioned at the crossroads of collaborative thought and innovative ideation, this activity channels collective reflection on forward-looking topics. By promoting out-of-the-box thinking, it serves as a potent catalyst for brainstorming sessions and fosters deeper reflective processes. Its alignment with the BCG's objectives underpins its utility in nurturing strategic, creative perspectives on the future landscape of employment.

This workshop stimulates idea generation through an array of futuristic scenarios. Participants receive a collection of images that depict varying futures, showcasing the evolution of society and technology: from a world where nature reigns supreme to a more cyberpunk vision where machines dominate. Participants select a scenario and envision a

profession they might pursue within that world. Subsequently, they are tasked with crafting a representation of this profession, such as a pivotal tool or the workspace required for it. For this creative endeavour, a selection of stationary materials is provided, including modelling clay, post-it notes, toothpicks, buttons, straws, glue, tape, and pencils.

Finally, participants present their chosen profession, the crafted object, and their reasoning behind each selection to the group.

Workshop 3. From bits to atoms. Offers a hands-on immersion into the world of digital fabrication. Prioritising instrumentation (adept use of specific tools, devices, and techniques necessary for a particular domain or process), this workshop equips participants with the technical prowess required to seamlessly transition from digitally scanning objects to crafting their tangible counterparts. While mastering the use of advanced tools such as laser cutter and 3D printers, attendees also get an opportunity to dabble in co-creation and iterative design. The essence of the activity aligns well with BCG's emphasis on skillful tool utilisation and innovative thinking in the modern creative landscape.

The workshop initiates with an educational overview of various digital fabrication processes. This includes introducing participants to technologies such as scanning (utilising an array of different tools and technologies), laser cutting, 3D printing, and vinyl cutting. These are not just theoretical presentations; participants are encouraged to interact with the tools and grasp their practical implications in a Fab Lab setting.

The main project of the workshop challenges participants to encapsulate the essence of the BCG project into a distinct logo. This isn't just any logo, but one built from physical objects and hand tools available within the Fab Lab. Working in teams, participants collaborate to conceptualise, design, and agree upon their logo, taking into account the materials best suited for their envisioned end-product.

The next step takes participants into the realm of digitalization. They utilise a camera setup to capture an image of their constructed logo. This image is then imported into specialised software that converts the raster image into a vector format (format compatible with most digital fabrication tools) During this phase, participants also adjust settings to dictate how the logo will be transferred onto the chosen material, ensuring desired detailing.

From here, the vectorized logo is brought to life through fabrication. While there are multiple pathways available (such as 3D printing or producing a sticker with a vinyl cutter), in this instance, the participants chose to create a tangible and reusable logo stamp. This involved leveraging a laser cutter to engrave their design into rubber, crafting a stamp that can be inked and pressed onto various surfaces, such as paper or fabric.

The workshop culminates in a session where teams showcase their fabricated logos, discussing the choices made during the design and fabrication processes, and reflecting on the skills acquired and the experience of transiting from a concept to a tangible product.

Workshop 4. Digital Prototyping. Diving deep into the practicalities of digital design, this workshop emphasises hands-on application and real-world problem solving. Participants are introduced to the fundamentals of electronics, distinguishing between sensors (inputs) and actuators (outputs). With this foundational knowledge, they then embark on a journey to conceive and construct simple gadgets. By integrating electronics and programming, the workshop underscores the synergy between these domains, guiding participants to create intuitive applications that dynamically respond to user input. Through "Digital Prototyping", participants harness the opportunity to craft functional prototypes from scratch, by piecing together different components to create a cohesive, controllable gadget, highlighting the essence of innovation and tangible application.

At the beginning of the workshop, participants are introduced with several sensors and actuators, gaining insights into their core functionalities and potential applications. This foundational knowledge helps them comprehend how these components detect changes in their environment and initiate corresponding actions, laying the groundwork for creating interactive gadgets.

Building on this, they are then exposed to the fundamental algorithm building using simple conditional statements (when I receive this input, the output should react in this way). To this end workshop presents the IFTTT⁵ online tool that permits building simple software using a recipe-like structure.

With this theoretical foundation set, participants move to more hands-on exercises, experimenting with the relationships between various inputs (sensors) and their resulting outputs (actuators).

Finally, participants are provided a challenge: creating an innovative object capable of transmitting a specific emotion to someone at a distance. Equipped with the provided modules and supplemented by materials from the lab, participants are tasked with conceptualising, designing, and prototyping such gadget.

Assessment methodology and metrics

⁵ <https://ifttt.com/>

Partners participate in the workshop as a group. After each workshop, to assess the activity, and determine how it fits within the goals of the project, the facilitator conducts a feedback session conducting a Reflective canvas (canvas shown in the [Appendix 3](#)). This canvas evaluates the following metrics with the following methodology

- *Goal Alignment:* This assesses the workshop's compatibility with BCG's overarching objectives. A numerical scale from 0 to 100% is utilised, where respondents indicate how well the workshop fits within the BCG course. A 0% signifies no alignment, 50% suggests it would fit but with significant changes, and 100% means it aligns perfectly. The expansive numerical scale facilitates deeper reflection, because when assigning a numerical value it is necessary to reflect on why you gave such value.
- *Improvement Areas:* This section evaluates what facets of the workshop should be kept, increased, reduced, ceased, or initiated to better meet BCG's requirements. The canvas employs a Starfish Retrospective⁶ for this metric—a tool frequently used to gather feedback and ideas for improvement. When using the Starfish methodology, respondents address: What should we start doing? What should we stop doing? What should we do more of? What should we do less of? And, what should we continue doing?
- *Skills Engagement:* This determines the specific skills engaged during the workshop. Respondents are provided with a table that lists three core skills: Strategic and Critical Reflection, Industry Process, and Entrepreneurial Mindset, along with their associated sub-skills. Respondents mark the skills they believe were developed during the workshop. A full list of these skills can be found in [Appendix 3](#).
- *Facilitator Dependence and Platform integration:* This evaluates the workshop's need for a facilitator and its potential to be integrated into the BCG's online platform, and the preferred multimedia format for it. Respondents answer Yes/No questions, providing reflective rationales for their responses. The questions posed are: *As a participant ... Do you think you could do this activity without a facilitator? And Do you think this activity could be on BCG's online platform? What kind of format could we use?*

Each partner first completes the canvas independently. Following this, the facilitator initiates a discussion to reach a consensus on three main topics:

- 1) Is the activity suitable for the BCG course?
- 2) What skills are fostered through this activity?
- 3) How can this activity be seamlessly integrated into the course, and what alterations might it require?

⁶ <https://www.facilitator.school/template/starfish-retrospective>

One of the partners reviewed the answers of all participants and provided a summary of results. Results presents both quantitative values (workshop fits in BCG goals or BCG skills utilised in each workshop) and qualitative values (for the rest of metrics)

Results

Workshop 1. Atlas of Weak Signals.

The efficacy of this workshop within the course framework was strongly endorsed, reflected by a notable average approval rate of 80%. Participants particularly emphasised the workshop's ability to encourage out-of-the-box thinking, offering fresh and transformative perspectives. As illustrated in Figure 8, the workshop significantly bolsters the domain of Strategy and Critical Reflection, especially emphasising aspects like "Stepping out of the comfort zone", "Critical Thinking and Reflection", and a multidimensional X-Thinking approach which encapsulates strategic thinking, critical analysis, and empathy. It also mildly resonates with understanding industry processes, particularly enhancing "Presentation and Speaking skills". However, its contribution to fostering an Entrepreneurial mindset was identified to be relatively modest, primarily recognized through the lens of "Leaving the comfort zone".

Despite the high regard for this workshop, there was a unanimous consensus among participants regarding the challenges of facilitation. To streamline the process and potentially allow for self-guided execution, they recommended the incorporation of video tutorials with concise, step-by-step guidelines and designated platforms for individual result submissions. It was, however, acknowledged that a shift to an online format might curtail participant interactions. For seamless digital integration, the use of comprehensive PDF documentation, along with carefully crafted video tutorials, is recommended. Miro board was considered a suitable tool for interaction when a physical card deck is not available .

Strategy and critical reflection		Industry processes	Entrepreneurial mindset
5	Strategic thinking	Understanding of different departments	Basic business skills
7	Critical thinking and reflection	Unders. terminology and presentation formats	4 Understanding your purpose and values
2	Interpretation of the brief	Communication and collaboration skills	How to be a good mentee
	Working for a client	6 Presentation and speaking skills	Resilience
2	Understanding the audience	Emotional intelligence	Understanding your mistakes and reiterating
8	Stepping out of your comfort zone	Planning, management and financial literacy-what everything costs	Understanding risk/risk assessment
2	Dive deeper into the subject area	4 Having a vision	3 Define your own identity - Personal branding
3	Challenging your bias	Team mentality - shared success and failures	4 Resourcefulness and willingness to constantly learn
	Confidence to make mistakes	3 Build and create collaborative relationships	2 Inquisitiveness
5	How to build an argument	5 Communication skills	7 Leave your comfort zone
3	How to defend and justify decision making	3 Collaboration skills	4 Face new challenges
3	Confidence in being able to have an opinion	Emotional intelligence	Business literacy
6	X-thinking (Strategic thinking, Critical thinking, Reflective thinking, Empathy)	"Creative Industry" literacy <ul style="list-style-type: none"> • Understanding of different departments • Understanding terminology and presentation formats • Planning, management and financial literacy-what everything costs -> I would put this in business skills 	2 Entrepreneurial mindset
4	Rhetoric (Building arguments, Defend decisions, Counter-argument your own ideas: challenge your bias)		2 Resilience
4	Self-confidence (for making mistakes, to express opinions, to step out of comfort zone)		3 Building an identity
2	Understanding the process (Interpretation of the brief , Dealing with a client , Dive deeper into the subject area)	4 Having a vision	How to be a good mentee

Figure 8. Skills developed in the Atlass of Wak Signals (N=8)

Workshop 2. Jobs of the future.

The alignment of this workshop with BCG's objectives was perceived to be moderate, with an average rating of 65%. This suggests there might be areas for improvement or better contextualization within the broader course framework. The primary skills fostered through this activity gravitate towards Industry Processes, especially "Communication and Collaboration skills". It also notably enhances the Entrepreneurial Mindset, with a focus on "Understanding Risk Assessment". While other skills were touched upon, they were recognized by less than half of the participants, indicating potential scope for content enrichment.

Strategy and critical reflection		Industry processes	Entrepreneurial mindset
2	Strategic thinking	Understanding of different departments	3 Basic business skills
4	Critical thinking and reflection	Unders. terminology and presentation formats	Understanding your purpose and values
2	Interpretation of the brief	6 Communication and collaboration skills	How to be a good mentee
2	Working for a client	2 Presentation and speaking skills	Resilience
	Understanding the audience	Emotional intelligence	Understanding your mistakes and reiterating
4	Stepping out of your comfort zone	3 Planning, management and financial literacy-what everything costs	5 Understanding risk/risk assessment
2	Dive deeper into the subject area	Having a vision	Define your own identity - Personal branding
	Challenging your bias	Team mentality - shared success and failures	Resourcefulness and willingness to constantly learn
2	Confidence to make mistakes	2 Build and create collaborative relationships	3 Inquisitiveness
3	How to build an argument	Communication skills	3 Leave your comfort zone
	How to defend and justify decision making	Collaboration skills	Face new challenges
2	Confidence in being able to have an opinion	Emotional intelligence	Business literacy
	X-thinking (Strategic thinking, Critical thinking, Reflective thinking, Empathy)	"Creative Industry" literacy <ul style="list-style-type: none"> • Understanding of different departments • Understanding terminology and presentation formats • Planning, management and financial literacy-what everything costs -> I would put this in business skills 	Entrepreneurial mindset
2	Rhetoric (Building arguments, Defend decisions, Counter-argument your own ideas: challenge your bias)		3 Resilience
	Self-confidence (for making mistakes, to express opinions, to step out of comfort zone)		Building an identity
	Understanding the process (Interpretation of the brief , Dealing with a client, Dive deeper into the subject area)		Having a vision

Figure 9. Skills developed in Jobs of the future (N=8)

Transitioning this workshop to an online platform appears straightforward, though it is crucial to furnish detailed information regarding the necessary materials in advance. To provide a comprehensive understanding of the thought process and capture the experiential aspect, students should be encouraged to produce videos showcasing their results. In the event of self-paced, non-facilitated execution, a meticulously structured step-by-step guide accompanied by illustrative videos will be indispensable to ensure participants garner the full value of the workshop.

Workshop 3. From bits to atoms.

This workshop garnered an acceptable rating of 70%, indicating room for enhancement in order to be completely aligned with BCG's objectives. The activity proved comprehensive

in its skill coverage, touching upon all three core areas: Strategy and Critical Reflection, particularly fostering the "Confidence to Make Mistakes"; Industry Process, emphasising "Collaboration and Communication Skills"; and the Entrepreneurial Mindset, promoting an understanding of one's errors and the importance of iteration. Notably, this workshop instils in designers the crucial attribute of "Leaving your comfort zone" (Figure 10)

While the workshop can proceed without facilitation, a meticulously detailed step-by-step guide on the various processes is imperative for self-paced learners. The integration of this workshop into an online platform prompted extended discussions, primarily revolving around accessing digital fabrication processes and interfacing with the necessary equipment. Several feasible solutions emerged: leveraging online services that facilitate design printing via laser cutters or 3D printers and subsequently shipping the product, or tapping into local makerspaces or fab labs by networking within the broader maker community. Additionally, deliberations on the BCG toolkit unfolded, focusing on the essential equipment that would constitute the toolkit.

Strategy and critical reflection		Industry processes	Entrepreneurial mindset
	Strategic thinking	Understanding of different departments	Basic business skills
2	Critical thinking and reflection	Unders. terminology and presentation formats	Understanding your purpose and values
	Interpretation of the brief	Communication and collaboration skills	How to be a good mentee
	Working for a client	Presentation and speaking skills	2 Resilience
	Understanding the audience	Emotional intelligence	7 Understanding your mistakes and reiterating
4	Stepping out of your comfort zone	Planning, management and financial literacy-what everything costs	Understanding risk/risk assessment
2	Dive deeper into the subject area	2 Having a vision	Define your own identity - Personal branding
	Challenging your bias	3 Team mentality - shared success and failures	Resourcefulness and willingness to constantly learn
7	Confidence to make mistakes	4 Build and create collaborative relationships	Inquisitiveness
	How to build an argument	5 Communication skills	5 Leave your comfort zone
	How to defend and justify decision making	7 Collaboration skills	4 Face new challenges
	Confidence in being able to have an opinion	Emotional intelligence	Business literacy
2	X-thinking (Strategic thinking, Critical thinking, Reflective thinking, Empathy)	"Creative Industry" literacy <ul style="list-style-type: none"> • Understanding of different departments • Understanding terminology and presentation formats • Planning, management and financial literacy-what everything costs -> I would put this in business skills 	Entrepreneurial mindset
	Rhetoric (Building arguments, Defend decisions, Counter-argument your own ideas: challenge your bias)		Resilience
2	Self-confidence (for making mistakes, to express opinions, to step out of comfort zone)		2 Building an identity
	Understanding the process (Interpretation of the brief , Dealing with a client , Dive deeper into the subject area)	Having a vision	How to be a good mentee

Figure 10. Skills developed in From bits to atoms (N=8)

Workshop 4. Digital prototyping.

Drawing parallels to the "From Bits to Atoms" workshop, this module too finds its roots in practical applications. With a suitability rating of 75%, it underscores a positive inclination towards its curriculum. Like Workshop 3, "Digital Prototyping" touches upon all three core areas, fostering Strategy and Critical Reflection through the "Confidence to Make Mistakes"; Industry Process by enhancing "Collaboration and Communication Skills"; and Entrepreneurial Mindset, by teaching participants to understand their errors and iterate. This workshop similarly champions the significant trait of encouraging designers to stretch beyond their conventional boundaries (Figure 11)

Though it can be conducted without facilitation, it's paramount to have a clear, comprehensive step-by-step guide, especially for newcomers to the IoT space. The logistical challenge here, akin to Workshop 3's digital fabrication processes, revolves around accessing IoT devices. Possible solutions include simulations or employing online tools like Node-RED. However, optimal results are attained when participants can work hands-on with the electronic modules. Despite these nuances, a shared agreement resonated that, given the wealth of online resources and video tutorials by makers, integration into the platform remains not only feasible but highly promising.

Strategy and critical reflection		Industry processes	Entrepreneurial mindset
	Strategic thinking	Understanding of different departments	Basic business skills
2	Critical thinking and reflection	Unders. terminology and presentation formats	Understanding your purpose and values
4	Interpretation of the brief	Communication and collaboration skills	How to be a good mentee
	Working for a client	Presentation and speaking skills	2 Resilience
	Understanding the audience	4 Emotional intelligence	7 Understanding your mistakes and reiterating
4	Stepping out of your comfort zone	Planning, management and financial literacy-what everything costs	Understanding risk/risk assessment
2	Dive deeper into the subject area	Having a vision	4 Define your own identity - Personal branding
	Challenging your bias	4 Team mentality - shared success and failures	Resourcefulness and willingness to constantly learn
7	Confidence to make mistakes	4 Build and create collaborative relationships	Inquisitiveness
	How to build an argument	5 Communication skills	5 Leave your comfort zone
	How to defend and justify decision making	7 Collaboration skills	4 Face new challenges
	Confidence in being able to have an opinion	Emotional intelligence	Business literacy
2	X-thinking (Strategic thinking, Critical thinking, Reflective thinking, Empathy)	"Creative Industry" literacy <ul style="list-style-type: none"> • Understanding of different departments • Understanding terminology and presentation formats • Planning, management and financial literacy-what everything costs -> I would put this in business skills 	Entrepreneurial mindset
	Rhetoric (Building arguments, Defend decisions, Counter-argument your own ideas: challenge your bias)		Resilience
4	Self-confidence (for making mistakes, to express opinions, to step out of comfort zone)		Building an identity
	Understanding the process (Interpretation of the brief , Dealing with a client , Dive deeper into the subject area)	Having a vision	How to be a good mentee

Figure 11. Skills developed in Digital Prototyping (N=8)

7. Evaluation of training activity 3. Methodologies and results.

In October, from the 17th to the 19th, Ljubljana play host to an innovative demo pilot, an integral part of the "Bridging the Creativity Gap" project. This three-day workshop is designed to bridge theoretical knowledge and practical application by testing a range of learning activities and workshops in a real-world teaching scenario.

The core content of these activities is meticulously curated to augment skills in the three key competency areas elaborated in previous activities: Strategy and critical reflection, Industry process, and entrepreneurial mindsets. A unique feature of these workshops is the incorporation of elements from the maker culture, an intentional move to challenge conventional thinking patterns and inspire students to think outside the box. These activities are curated from results of [Activity 2](#). The primary audience for this pilot are students nearing the completion of their degree program in the creative industry.

A total of 17 students immersed themselves in the pilot, accompanied by 3 dedicated tutors. Their role was to guide and support these students as they navigated through the activities. The inclusion of the tutors helped to understand what kind of guidance tutors need to further develop the content of the course and integrate into the learning practices. Additionally, seven staff members from the project facilitated the tasks, ensuring a smooth process and offering indispensable support to the educators.

The multi-layered evaluation process was twofold: Firstly, it gauged the effectiveness and relevance of the educational material and accompanying teacher's guide designed for facilitating the activities. Secondly, it assessed the processes used throughout the pilot. The culmination of the workshop saw students conceptualising and presenting a campaign, a response to a given creative brief. While the first two days were divided into six distinct workshops, the final day was primarily reserved for campaign finalisation and a presentation session to a panel of experts.

This section delves deep into the methodologies used during the pilot and analyses the results, offering insights into the success and areas of potential improvement of the tested workshops.

During the three workshop days, various activities were tested independently as workshops. Our main objective across these three days was to facilitate the ideation of innovative solutions aligned with the given brief's requirements. What follows is a comprehensive outline of each activity, detailing its description and associated learning outcomes.

1. The Creative Process:

Description: The journey through creativity often feels chaotic and strenuous. Yet, by anchoring your efforts with a systematic approach, it becomes less daunting. Numerous tools and methodologies exist to guide creativity. We particularly focus on the Double Diamond Model, a brainchild of the Design Council.

Learning Outcomes:

- Appreciation of the creative process.
- Reflection on individual creative inclinations and competencies.
- Recognition of the essence of collaboration and the strength of balanced teams.

2. The Creative Brief:

Description: The demarcation between personal artistic expressions and commercial creative endeavours often hinges on the presence of a creative brief. Think of this brief as a foundational guide, detailing pivotal insights for constructing your creative response.

Learning Outcomes:

- Understand the significance of a brief in the commercial creative realm.
 - Ability to decipher and distil essential elements of a brief.
 - Realise the importance of audience empathy in solution development.
- Grasp the process of deriving insights from observations.

3. Atlas of Weak Signals (AoWS):

Description: Conceptualised by Mariana Quintero from IAAC Fab Lab Barcelona, the AoWS toolkit transforms weak signals research into an actionable tool. It aids in navigating potential scenarios derived from contemporary trends, positioning creativity to address future challenges.

Learning Outcomes:

- Equip creative students to address imminent challenges with innovative design propositions.
- Comprehend potential scenarios stemming from current global trends.
- Discover avenues for innovation, policymaking, and business in the future.

4. Ideation Session:

Description: This marks our transition from understanding to solution formulation. With insights from the brief and the AoWS, students can now embark on their ideation journey.

Learning Outcomes:

- Mastery of techniques for cultivating novel thinking.
- Learn the dynamics of pushing and defending ideas within a team framework.

5. From Bits to Atoms:

Description: This workshop explores the conversion of data into tangible artefacts through digital fabrication. Participants utilise physical objects to reinvent the idea creation process, generate a novel graphic language, or find unique solutions to distinct challenges.

Learning Outcomes:

- Acquire skills in 2D and 3D scanning techniques.
- Understand and utilise digital fabrication methods for rapid idea prototyping.
- Application of hands-on techniques for creative endeavours like screen printing.

6. Digital Prototyping:

Description: Prototyping remains a cornerstone in the creative domain. It enables the examination and refinement of ideas prior to full-scale realization. Digital design, advertising, and other creative niches regularly employ prototyping as a crucial part of their workflow.

Learning Outcomes:

- Grasp the role and advantages of prototyping in the design continuum.
- Learn the techniques and tools for digital prototyping.
- Understand the processes and benefits of physical prototyping.

7. Preparing and Presenting the Pitch:

Description: After brainstorming, ideation, and prototyping sessions, students gear up for one of the most critical phases of the project: the pitch. This phase is divided into two major steps. The first involves collaborative team efforts, guided by the teacher, to fine-tune and prepare their presentations. The culmination of this phase is the actual pitch, where students present their innovative solutions to a panel of experts.

Learning Outcomes:

- Develop the ability to consolidate and articulate creative ideas effectively to stakeholders.
- Understand the importance of teamwork in refining a presentation.
- Practise effective communication during a live pitch.
- Gain feedback and insights from experts in the field, fostering a growth mindset.

7.1. Workshop preparation, metrics and data collection

Workshop preparation took several months. Each task was meticulously planned and executed to ensure optimal learning outcomes and successful engagement of the participants. Before starting the workshop preparation took 4 different phases:

1. *Module Definition:*

Before the commencement of the workshop, each task was systematically categorised into a module. Each module was designed to highlight:

- The specific learning outcomes expected upon completion.
- Skills participants would harness or enhance.
- Comprehensive step-by-step guidelines to facilitate effective understanding.
- Supplemental content to bolster the main teaching material.
- Teacher's recommendations on how to run the workshop and assessment guidelines to evaluate the proficiency and understanding of the participants.

2. *Teacher Engagement:*

- Comprehensive information related to each module was shared with the teachers in advance to ensure they were adequately prepared (description of tasks, additional information, assessment guidelines ...).
- A meeting was arranged with the teachers to provide a deeper insight into the whole concept of the event, highlighting their expected role and addressing any queries or concerns they might have.

3. *Student Recruitment:*

A diverse pool of students from the city of Ljubljana, majorly with design backgrounds, was recruited for the workshop. To spark their interest and provide clarity:

- The workshop was introduced, highlighting its unique structure and benefits.
- Emphasis was laid on the learning outcomes, further elucidating how this workshop could augment their career trajectories.

4. *Preliminary Engagements:*

On the first day of the workshop:

- A morning session was organised with teachers to revisit the concepts, ensuring they felt confident in facilitating the workshop.
- The staff spearheaded the actual workshop activities while teachers played the pivotal role of facilitators. Every teacher was assigned a specific group of students to oversee and guide. Importantly, the students maintained their group allocations throughout the entirety of the workshop, fostering a sense of continuity and camaraderie.
- Twice during the day (lunch and after the workshop session) we did a wrap-up of what worked well and what should be improved for the following session.

From the assessment perspective, the goal is to explore different metrics from different stakeholders (students, tutors, industry experts (that serve as jury). The perspectives of different partners were also important. That is why different collection methods were chosen.

Students

Metrics

Knowledge and Preparedness Metrics:

- Awareness of the training's objectives.
- Familiarity with the learning goals.
- Motivation level to participate.
- Confidence level about performance in the training.

Background and Experience Metrics:

- Expectations for the training.
- Personal definition of "Maker".
- Past experience with specific processes or technologies.

Skill Proficiency Metrics (self-assessed):

- Strategy and critical reflection.
- Specific skills of the creative industry (e.g., terminology, methodologies, presentation skills, communication).
- Entrepreneurial mindset.

Activity Assessment Metrics:

- Clarity about the objectives of each activity.
- Understanding and application of the required methodologies.
- Perception of support from tutors and project staff.
- Contribution of the activity to the development of the solution of the brief.

Competence Training Metrics:

- Skills trained within the contexts of:
 - Strategy and Critical Reflection.
 - Industry Process.
 - Entrepreneurial Mindset.

Learning & Contribution Insights:

- Learnings from each activity.
- Personal reflection on successes, challenges, pitfalls, etc.

Final Pitch Assessment Metrics:

- Satisfaction with the final pitch.
- Activities that influenced the final solution.
- Recommendations for additional activities/skills/practices.

Training Impact and Evaluation Metrics:

- General feedback about the training activities (e.g., motivation, engagement, structure).
- Self-assessed competence levels post-training in various areas.

Career Relevance Metrics:

- Perception of how training enhanced understanding about skills required in working life.
- Perception of how training improved employability.

Overall Feedback Metrics:

- Meeting of expectations from the training.
- Reasons for unmet expectations.
- Open comments and suggestions.

Data collection

- **Pre-activity survey to students:** Collect background information from students, e.g. what was their exposure to maker culture and digital fabrication processes ([Appendix 5](#))
- **Survey to students after the first and second day:** Study the impact of the course, with focus in the three studied areas of competence, gathering also feedback from students on aspects that might need some improvements and which aspects did work ([Appendix 5](#))
- **Discussion session after activity with students:** focus group aiming to reflect on the output of the whole activity, emphasising the aspects where students found more difficulties and positive and encouraging aspects of the activities. During the session we also discussed the main learnings of the students.
- **Anonymous feedback in post-it for teachers and students:** collect immediate feedback about the different activities: what is working? What is not working well? Which are the main challenges?

Teachers

Metrics

Understanding and Preparedness Metrics:

- Clarity on outcomes and learning goals of the training sessions.
- Understanding of the activities they will facilitate.
- Confidence about their role.
- Motivation to facilitate the sessions.
- Expectations for the training session.

Activity Evaluation Metrics:

- Adequacy of information in guidelines for understanding goals and methodologies.
- Adequacy of information in guidelines for activity preparation and facilitation.
- Alignment of guidelines with the actual activity.
- Perceived student understanding of activity objectives and methodologies.
- Additional support needed within the activity.

Competence Training Insights:

- Competences trained in Strategy and Critical Reflection

- Competences trained in Industry Process
- Competences trained in Entrepreneurial Mindset

Activity Impact Insights:

- Personal reflection on successes, challenges, pitfalls.
- How the activity contributes to the solution of the brief.

General Training Feedback Metrics:

- Meeting of expectations.
- Perception if training goals have been achieved.
- Assessment of students' solution progress and further support needed.

Final Pitch Evaluation Metrics:

- Visible competences in Strategy and Critical Reflection.
- Visible competences in Entrepreneurial Mindset.
- Visible competences in Industry Process.
- Ranking of influence from various activities on the final solution.

Training Material and Methodology Feedback:

- Alignment of material/methodologies with training goals.
- Evaluation of course structure's logic.
- Recommendations for changes to training structure.
- Suggestions for improving the provided material.
- Assessment if training goals have been achieved and reasons for any shortcomings.
- Personal reflections on training's successes, challenges, etc.

Data collection

- **Anonymous feedback in post-it for teachers and students:** collect immediate feedback about the different activities: what is working? What is not working well? Which are the main challenges?
- **Survey to teachers at the beginning of day 1 and day 2:** The goal was to study the quality and adequacy of the provided guidelines for teachers, as well as the confidence of the teachers to execute the activities with the provided material (Appendix 5)
- **Survey to teachers at the end of day 1, day 2:** Reflect on the output of the different activities and define aspects both in the content and the methodology that should be modified. (Appendix 5)
- **Final survey of the teachers:** Analyse the perceived impact of the whole training. (Appendix 5)
- **Discussion session after first and second day with teachers:** focus groups which aims to reflect on the training day, emphasising teachers' successes and challenges.

Industry experts (jury)

Metrics

- Students shows knowledge in the three main areas of BCG
- Innovative ideas

Data collection

- Assessment sheets provided to the experts so they can assess the final pitch of students. (Assessment provided in [Appendix 6](#))

Partners

Qualitative analysis

- Perception of student and teachers feelings
- Students engagement
- Tutors ability to facilitate the tasks
- Student-tutor interaction
- Students' learning

Data collection

- **Project staff members notes:** Free notes taken during the different sessions, where project staff members annotate main findings, ideas and reflections. (Guidelines in [Appendix 6](#))

7.2. Results

7.2.1. Data collection from surveys

The following table summarises the amount of answers we got for each survey:

<i>GROUP</i>	<i>Initial</i>	<i>First day</i>	<i>Second day</i>	<i>Final</i>
<i>Teachers</i>	3	4	4	3
<i>Students</i>	8	0	4	5

Teachers survey. Summary.

- Although most of the teachers answered, some parts were answered by just 3 of them.
- Teachers need the material with more time beforehand

- Teachers need clearer description of their role beforehand
- In some occasions, teachers would have needed some clarification (AoWS)
- Teachers mostly claim to have gone carefully through the given material beforehand, but they feel they have not had enough time to prepare. This feeling gets more negative throughout the activities.
- Teachers would have liked to have access to the introduction slides shown in some of the activities
- Support of another tutor would have been needed in the activities: Creative Process
- Summary of competences covered per activity (at least one teacher consider the competence is trained):

ACTIVITY	Strategy and Critical reflection (12)	Industry processes (10)	Entrepreneurial mindset (11)
Creative process	11	7	7
Creative brief	11	7	6
AoWS	9	7	7
Ideation	12	7	7
Bits & Atoms	5	3	5
Digital Prototyping	2	3	2

- Summary of votes from tutors for competences per activity, and number of activities where each competence has been trained:
 - There is always at least one teacher that thinks that the competences on Strategy and Critical reflection have been covered in at least one of the activities.
 - None of the teachers thought these competences from Industry processes were covered in any of the activities: Understanding of different departments, Planning, management and financial literacy
 - None of the teachers thought these competences from Entrepreneurial mindset were covered in any of the activities: Business literacy, How to be a good mentee,

STRATEGY AND CRITICAL REFLECTION	Votes from tutors(n=4)						IN, TOTAL ACTIVITIES (n=6)
	Creative Process	Creative brief	AoWS	Ideation	Bits and Atoms	Digital Proto.	

Strategic thinking	2	2	3	1	0	0	4
Understanding the audience	3	2	0	2	0	0	3
Interpretation of the brief	4	2	0	3	0	0	3
Working for a client	0	1	0	1	0	0	2
Critical thinking and reflection	3	3	3	2	1	0	5
Stepping out of their comfort zone	1	1	4	3	1	0	5
Dive deeper into the subject area	3	2	4	2	1	1	6
Challenging their bias	1	0	2	2	1	0	4
Confidence to make mistakes	3	2	2	1	2	2	6
How to build an argument	3	3	3	4	0	0	4
How to defend and justify decision making	3	1	3	3	0	0	4
Confidence in being able to have an opinion	2	2	2	1	0	0	4
TOTAL COMPETENCES PRACTICED	11/12	11/12	9/12 75%	12/12 100%	5/12 42%	2/12	
EXPECTED	100%	ND	100%	ND	60%	80%	

INDUSTRY PROCESS	Votes from tutors(n=4)						IN,TOTAL ACTIVITIES (n=6)
	Creative Process	Creative brief	AoWS	Ideatio n	Bits and Atoms	Digital Proto.	
Understanding of different departments	0	0	0	0	2	0	1
Understanding professional terminology and presentation formats	0	0	0	1	0	0	1
Collaboration skills	4	4	4	2	2	2	6
Presentation and speaking skills	1	2	2	3	0	0	4
Emotional intelligence	2	3	1	0	0	0	3
Planning, management and financial literacy-what everything costs	0	0	0	0	0	0	0
Build and create collaborative relationships	3	2	2	3	1	0	5
Team mentality - shared success and failures	4	3	3	2	0	1	5
Having a vision	2	2	3	1	0	1	5
Communication skills	4	1	2	3	0	0	4

TOTAL COMPETENCES PRACTICED	7/10	7/10	7/10	7/10	3/10	3/10
	70%	70%	70%	70%	30%	30%
EXPECTED	ND	70%	30%	ND	60%	60%

ENTREPRENEURIAL MINDSET	Votes from tutors(n=4)						IN, TOTAL ACTIVITIES (n=6)
	Creative Process	Creative brief	AoWS	Ideation	Bits and Atoms	Digital Proto.	
Business literacy	0	0	0	0	0	0	0
Understanding your purpose and values	2	2	1	3	0	0	4
How to be a good mentee	0	0	0	0	0	0	0
Resilience	1	0	0	0	0	0	1
Understanding your mistakes and reiterating	2	0	0	1	0	0	2
Understanding risk/risk assessment	0	1	1	1	1	0	4
Define your own identity - Personal branding	1	2	1	1	1	0	5
Resourcefulness and willingness to constantly learn	1	0	3	0	2	0	3
Inquisitiveness	0	1	1	1	1	0	4
Leave your comfort zone	3	2	3	2	0	1	5

Face new challenges	2	3	3	2	2	2	6
TOTAL COMPETENCES	7/11	6/11	7/11	7/11	5/11	2/11	
PRACTICED	64%	55%	64%	64%	45%	18%	
EXPECTED	ND	50%	70%	ND	60%	80%	

Competences shown in the **FINAL PITCH**, according to tutors

STRATEGY AND CRITICAL REFLECTION	FINAL PITCH Votes (n=4)
Strategic thinking	3
Understanding the audience	2
Interpretation of the brief	2
Working for a client	2
Critical thinking and reflection	2
Stepping out of their comfort zone	2
Dive deeper into the subject area	2
Challenging their bias	1
Confidence to make mistakes	1

How to build an argument	2
How to defend and justify decision making	3
Confidence in being able to have an opinion	3

INDUSTRY PROCESS	FINAL PITCH
	Votes (n=4)
Understanding of different departments	1
Understanding professional terminology and presentation formats	1
Collaboration skills	3
Presentation and speaking skills	3
Emotional intelligence	2
Planning, management and financial literacy-what everything costs	1
Build and create collaborative relationships	3

Team mentality - shared success and failures	3
Having a vision	2
Communication skills	3

ENTREPRENEURIAL MINDSET	Final pitch (votes n= 4)
Business literacy	0
Understanding your purpose and values	3
How to be a good mentee	0
Resilience	0
Understanding your mistakes and reiterating	2
Understanding risk/risk assessment	0
Define your own identity - Personal branding	2
Resourcefulness and willingness to constantly learn	1

Inquisitiveness	1
Leave your comfort zone	2
Face new challenges	3

Teachers end survey. Summary of competences.

ACTIVITY: CREATIVE PROCESS

GENERAL CONSIDERATIONS

Preparation of the activity: Almost all claim they went carefully through the material, although they did not always have time to prepare the activity. They mostly find the guidelines enough to understand, prepare and facilitate the activity. They think the timing of the activity is fair, although the objectives were not always clear for the students, although they managed to apply the methodologies.

Contribution to brief: Some of the teachers think this activity to be brief, giving a solid foundation and helping to structure the creative process in a logical order.

NEEDS

Teachers would have liked to have the slides presented as introductions, and the support of other tutor more experienced with the activity.

COMPETENCES

STRATEGY AND CRITICAL REFLECTION: 11/12

- **Completely agree:** (1) Interpretation of the brief.
- **Mostly agree:** (7) Understanding the audience, Critical thinking and reflection, Dive deeper into the subject area, Confidence to make mistakes, How to build an argument, How to defend and justify decision making, Confidence in being able to have an opinion
- **None:** (1) Working for a client

INDUSTRY PROCESSES: 7/10

- **Completely agree: (3)** Collaboration skills, Team mentality (share successes and failures), Communication skills
- **Mostly agree: (1)** Build and create collaboratively
- **None: (3)** Understanding of different departments, understanding professional terminology, Planning, management and financial literacy

ENTREPRENEURIAL MINDSET: 7/11

- **Completely agree: (0)**
- **Mostly agree: (1)** Leave your comfort zone
- **None: (4)** Business literacy, How to be a good mentee, Understanding risks, Inquisitiveness

ACTIVITY: CREATIVE BRIEF

GENERAL CONSIDERATIONS

Preparation of the activity: Just part of them claim they went carefully through the material, and mostly had not time to prepare the activity. They find the guidelines have room for improvement to help to understand, prepare and facilitate the activity. They think the timing of the activity is fair, although the objectives were not clear for the students, who sometimes struggled to apply the methodologies.

Contribution to brief: All the teachers agree this activity builds towards understanding the brief.

Reflection: Positive comment on the presentation on the wall. Negative comments: Brief needs more clarification, more examples; has too much information: needs a summary

COMPETENCES

STRATEGY AND CRITICAL REFLECTION: 11/12

- **Completely agree: (0)**
- **Mostly agree: (2)** Critical thinking and reflection, How to defend and justify decision making
- **None: (1)** Working for a client

INDUSTRY PROCESSES: 7/10

- **Completely agree: (1)** Collaboration skills
- **Mostly agree: (2)** Emotional intelligence, Team mentality
- **None: (3)** Understanding of different departments, understanding professional terminology, Planning, management and financial literacy

ENTREPRENEURIAL MINDSET: 6/11

- **Completely agree: (0)**
- **Mostly agree: (1)** Face new challenges
- **None: (5)** Business literacy, How to be a good mentee, Resilience, Understanding your mistakes, Resourcefulness and willingness to constantly learn

GENERAL Q's:

GENERAL

- Mostly all found the training met their expectations. At least one felt there was too much information and a lack of practical cases. Still, they all thought the goals were achieved.
- One felt overwhelmed by the amount of information received and how to help the students, pointing to receiving the guide short in advance

STUDENTS' STATUS

- Most of them consider students to be on the right track. One considers they are OK, but lacking engagement

ACTIVITY: AoWS

GENERAL CONSIDERATIONS

Preparation of the activity: In general, they claim they went carefully through the material, but mostly had not time to prepare the activity. They find the guidelines have room for improvement to help to understand, prepare and facilitate the activity. They think the timing of the activity is correct, and well positioned in the double diamond, and that the objectives were mostly clear for the students. Just one of the students' groups struggled to apply the methodologies.

Contribution to brief: They mostly think this activity builds somehow towards understanding the brief, helping to understand the wider context, and thinking out of the box.

Reflection: Positive comment: activity helps to open mind. Challenges: groups with same backgrounds and big groups.

NEEDS

Most of the teachers would have liked some more material for themselves: the slides on the power of creativity, more clarification of AoWS, or for the students: an example game played by others.

COMPETENCES

STRATEGY AND CRITICAL REFLECTION: 9/12

- **Completely agree (2):** Stepping out of comfort zone, Dive deeper into the subject area.
- **Mostly agree (4):** Strategic thinking, Critical thinking and reflection, How to build an argument, How to defend and justify decision making
- **None(3):** Understanding the audience, Working for a client

INDUSTRY PROCESSES: 7/10

- **Completely agree (1):** Collaboration Skills
- **Mostly agree(2):** Team mentality, Having a vision
- **None(3):** Understanding of different departments, Understanding professional terminology, Planning management and financial literacy

ENTREPRENEURIAL MINDSET: 7/11

- **Completely agree(0):**
- **Mostly agree(3):** Resourcefulness and willingness to constantly learn, Leave your comfort zone, Face new challenges
- **None(4):** Business literacy, How to be a good mentee, Resilience, Understanding your mistakes

ACTIVITY: IDEATION

GENERAL CONSIDERATIONS

Preparation of the activity: More or less. they went carefully through the material, but mostly had not time to prepare the activity. They find the guidelines have room for

improvement to help to understand and prepare the activity. They think the timing of the activity is correct, and well positioned in the double diamond. They think that the objectives were mostly clear for the students. And that none of the students' groups struggled to apply the methodologies.

Contribution to brief: They partly think this activity builds somehow towards creating the solution to brief, helping to develop creative ideas.

Reflection: Positive comment: one teacher thought there was great team collaboration.

COMPETENCES

STRATEGY AND CRITICAL REFLECTION: 12/12

- **Completely agree(1):** How to build an argument.
- **Mostly agree(3):** Interpretation of the brief, Stepping out of their comfort zone, How to defend and justify decision making
- **None(0):**

INDUSTRY PROCESSES: 7/10

- **Completely agree(0):**
- **Mostly agree(3):** Presentation and speaking skills, Build and create collaboratively, Communication skills
- **None(3):** Understanding the different departments, Emotional intelligence, Planning, management and financial literacy

ENTREPRENEURIAL MINDSET: 7/11

- **Completely agree(0):**
- **Mostly agree(1):** Understanding your purpose and values
- **None(4):** Business literacy, How to be a good mentee, Resilience, Resourcefulness and willingness to continuously learn.

ACTIVITY: BITS&ATOMS

GENERAL CONSIDERATIONS

Preparation of the activity: Most, but not all, claim they went carefully through the material, but mostly had not time to prepare the activity. They find the guidelines have room for improvement to help to understand, prepare and facilitate the activity. They mostly think the timing of the activity is correct, but it is not well positioned in the double diamond. They mostly think the objectives were mostly clear for the students and that they were able to apply the methodologies.

Contribution to brief: They mostly think this activity does not contribute to creating a solution to the brief. One thinks it provides insight into maker options

Reflection: Some students would have like to experience all of the tools, and 2D line scanning might not be useful process (although interesting)

NEEDS

Two of the teachers would have liked to have access to the material beforehand.

COMPETENCES

STRATEGY AND CRITICAL REFLECTION: 5/12

- **Completely agree(0):**
- **Mostly agree (1):** Confidence to make mistakes
- **None(7):** Strategic thinking, Understanding the audience, Interpretation of the brief, Working for a client, How to build an argument, How to defend and justify decision making, Confidence in being able to have an opinion

INDUSTRY PROCESSES: 3/10

- **Completely agree(0):**
- **Mostly agree(2):** Understanding of different departments, Collaboration skills
- **None(7):** Understanding professional terminology and presentation formats, Presentation and speaking skills, Emotional intelligence, Planning, management and financial literacy, Team mentality, Having a vision, Communication skills

ENTREPRENEURIAL MINDSET: 5/11

- **Completely agree(0):**
- **Mostly agree(2):** Resourcefulness and willingness to learn, Face new challenges

- **None(6):** Business literacy, Understanding your purpose and values, How to be a good mentee, Resilience, Understanding your mistakes, Leave your comfort zone

ACTIVITY: DIGITAL PROTO

GENERAL CONSIDERATIONS

Preparation of the activity: Just one went carefully through the material, and none had time to prepare the activity. They find the guidelines have room for improvement to help to understand, prepare and facilitate the activity. They mostly think the timing of the activity is not completely correct, and it is not well positioned in the double diamond. They mostly think the objectives were somehow clear for the students and that they were able to apply the methodologies.

Contribution to brief: They mostly think this activity does not contribute to creating a solution to the brief. One thinks it helps thinking new interactive or digital experiences

Reflection: Positive comment: This activity can make students think of new ways to approach the project

NEEDS

Experiment with the materials beforehand

COMPETENCES

STRATEGY AND CRITICAL REFLECTION: 2/12

- **Completely agree(1):** Confidence to make mistakes
- **Mostly agree(0):**
- **None(10):** Strategic thinking, Understanding the audience, Interpretation of the brief, Understanding the audience, Working for a client, Critical thinking and reflection, Stepping out of their comfort zone, Challenging your bias, How to build an argument, How to defend and justify decision making, Confidence in being able to have an opinion

INDUSTRY PROCESSES:3 /10

- **Completely agree(1):** Collaboration skills
- **Mostly agree(0):**
- **None(7):**

ENTREPRENEURIAL MINDSET: 2/11

- **Completely agree(1): Face new challenges**
- **Mostly agree(0):**
- **None(9):**

GENERAL CONSIDERATIONS

General Considerations (N=3):

	YES	NO
<u>Material/methodologies inline</u>	<u>3</u>	<u>0</u>
<u>Course structure is adequate</u>	<u>3</u>	<u>0</u>
<u>Training met expectations</u>	<u>3</u>	<u>0</u>
<u>Training goals achieved</u>	<u>3</u>	<u>0</u>

Activities, ordered according to their influence into the final solution (1 most – 6 less) (N=3)

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
<u>The creative process</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>The creative brief</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>0</u>
<u>Atlas of Weak Signals</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>1</u>
<u>Ideation</u>	<u>0</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>Bits & Atoms</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>
<u>Digital prototyping</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>1</u>

GENERAL

- All who answered found the training met their expectations. But just one thought the goals were achieved. At least one thinks it would have been better to dedicate more time to digital fabrication, to allow solving briefs in a more technological way.
- Pros: Material and activities were a success which kept participants immersed in the content. Brief and empathy mapping worked well. Success to provide such training in such a short time.
- Cons: Too short time .Digital prototyping did not work so well.

STUDENTS' STATUS

- Most of them consider students to be on the right track. One very organised group and one that would need more concreteness

Students survey. Summary.

- In some activities, half of the students report not getting enough support from tutors/project staff. Mainly, AoWS and Ideation.
- There is always, in all of the activities, some mentioning the team work: as being practised, as having trouble, as needing more support.
- Summary of votes from students for competences per activity, and number of activities where each competence has been trained:
 - There is always at least one student that thinks that the competences on Strategy and Critical reflection have been covered in at least one of the activities.
 - There is always at least one student that thinks that the competences on Industry processes have been covered in at least one activity
 - None of the students thought these competences from Entrepreneurial mindset were covered in any of the activities: **Define your own identity - Persona**

STRATEGY AND CRITICAL REFLECTION	Votes from students(n=4)						TOTAL ACTIVITIES (n=4)
	Creative Processes	Creative brief	AoWS	Ideation	Bits and Atoms	Digital Proto.	
Strategic thinking			3	1	2	0	3
Understanding the audience			1	1	1	0	3

Interpretation of the brief			1	2	1	0	3
Working for a client			0	1	1	0	2
Critical thinking and reflection			1	1	1	0	3
Stepping out of their comfort zone			1	1	2	2	4
Dive deeper into the subject area			2	1	1	2	4
Challenging their bias			1	0	1	0	2
Confidence to make mistakes			3	1	1	2	4
How to build an argument			1	0	1	0	2
How to defend and justify decision making			0	0	1	2	2
Confidence in being able to have an opinion			0	2	2	1	3
TOTAL COMPETENCES PRACTICED			9/12 75%	9/12 75%	12/12 100%	5/12 42%	
EXPECTED	ND	100%	100%	ND	60%	80%	

INDUSTRY PROCESS	Votes from studenta(n=4)					TOTAL ACTIVITIES
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	Creative Process	Creative brief	AoWS	Ideation	Bits and Atoms	Digital Proto.	(n=4)
Understanding of different departments			1	2	2	2	4
Understanding professional terminology and presentation formats			0	1	1	0	2
Collaboration skills			3	2	2	2	4
Presentation and speaking skills			1	1	1	0	3
Emotional intelligence			1	1	1	0	3
Planning, management and financial literacy-what everything costs			0	0	1	0	1
Build and create collaborative relationships			1	1	1	1	4
Team mentality - shared success and failures			3	2	1	1	4
Having a vision			1	1	2	2	4
Communication skills			1	2	1	1	4
TOTAL COMPETENCIES PRACTICED			8/10 80%	9/10 90%	10/10 100%	6/10 60%	

EXPECTED	ND	70%	30%	ND	60%	60%	
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ENTREPRENEURIAL MINDSET	Votes from students(n=4)						TOTAL ACTIVITIES (n=4)
	Creative Process	Creativ e brief	AoWS	Ideatio n	Bits and Atoms	Digital Proto.	
Business literacy			0	0	1	0	1
Understanding your purpose and values			1	1	0	0	2
How to be a good mentee			1	1	0	0	2
Resilience			0	1	0	1	2
Understanding your mistakes and reiterating			1	1	1	1	4
Understanding risk/risk assessment			1	0	0	0	1
Define your own identity - Personal branding			0	0	0	0	0
Resourcefulness and willingness to constantly learn			3	3	1	2	4
Inquisitiveness			3	2	1	2	4
Leave your comfort zone			3	2	1	1	4

Face new challenges			2	3	2	2	4
TOTAL COMPETENCIES PRACTISED			9/11 82%	9/11 82%	7/11 64%	6/12 55%	
EXPECTED	ND	50%	70%	ND	60%	80%	

Anonymous feedback board.

Success:

The existing notes remarks as positive the methodology (“learning from a brief”) as a good way of working because students are working starting from a concrete creative challenge. Several notes remark also the clarity of the content, with clear instructions and easy to follow. Activities were supported with clear examples. Another aspect that was pointed out was the inclusivity of the activity in general (this was also reported in the section 5). Meaning, that people with different backgrounds could get benefits of the activities.

Main pitfalls:

The main problems reported by students/teachers are related to the difficulty to understand the brief and express it with your own boards and aspects related with idea fixation (getting final solutions too early in the process). One note remarked the importance for judges to have read and interpreted correctly the brief, so they could give precise adequate feedback. This is related to some aspects commented by students in section 5 and annotated by staff members in section 7: students expected more academic feedback, focus on the process and not that much in the final result.

Things to improve:

Only two aspects pointed out here:

- Videos with subtitles. It was difficult to follow videos in English with different accents
- It is desired only one mentor focus in each group instead of several facilitators working in with different groups.

- Timing of the different activities was difficult. Students report that they would like that the different tasks in one activity should have more clear timing (help to structure the time).

Results from qualitative analysis of final focus group discussion with students.

A key component of the workshop's success was the significant role played by the teachers and tutors. Their guidance, expertise, and encouragement became instrumental in navigating the various challenges faced during the sessions. Particularly in moments where participants faced hurdles, such as the electronic prototypes' initial failure, the tutors showcased not only technical knowledge but also invaluable soft skills. Their ability to encourage perseverance, instil a problem-solving mindset, and foster a supportive learning environment was vital in ensuring the participants remained engaged and motivated. Moreover, their efforts to provide feedback and communication in English ensured inclusivity and clarity for all participants.

The workshop's collaborative and hands-on nature was especially highlighted. Participants overwhelmingly reported a heightened sense of community and a strong collaborative spirit. Such an environment proves not only beneficial for nurturing creativity but also facilitates the complex problem-solving processes often required in practical projects. This collaborative aspect, if further harnessed, could lead to richer project outcomes in future iterations.

Skill acquisition stood out as a pivotal component of the workshop. Participants' hands-on experience with electronics, coupled with their newfound understanding of various sensors, was considered invaluable. These skills, when viewed in the larger picture, could be directly applied to projects that intermingle technology and creativity. Moreover, the exposure to older technologies and methods adds a dimension that emphasizes the value of blending traditional and modern techniques.

However, the workshop was not without its challenges. Several participants grappled with the intricacies of electronics, which inadvertently taught them the value of persistence. This culture of embracing challenges and iterative problem-solving will, in the long run, yield more durable and robust project outcomes.

One area of feedback that requires attention is the perceived disconnect between theoretical knowledge and the hands-on workshops. Ensuring a seamless transition between ideation and execution is pivotal for the holistic success of projects. Consequently, future workshops could benefit from clearer alignment with overarching project goals,

integrating theoretical sessions with hands-on activities for a more contextual and cohesive learning experience.

The debate over the online versus in-person format was also noteworthy. While the workshop was in-person, there was a clear preference among participants for physical interactions, suggesting that such sessions yield richer collaborative outputs. However, with the ever-present possibility of remote requirements, a hybrid model blending both in-person and online sessions could be a future consideration.

Lastly, when examining the workshop through the lens of career relevance and formal studies, it was evident that participants found the activities enriching. The sessions provided insights and hands-on skills not necessarily covered in their traditional academic curricula. Such workshops, with their real-world applications and tangible skill-building, can offer participants a competitive edge in the job market.

In conclusion, while the workshop was met with positive feedback and clearly adds value to participants, there are areas of improvement. Ensuring activities balance theory with practice, integrating theoretical knowledge with hands-on sessions, and maintaining the workshop's relevance to participants' future careers will ensure the continual success and relevance of such initiatives. The role of teachers and tutors remains at the core of these initiatives, their guidance ensuring that both learning and practical goals are achieved.

Results from qualitative analysis of final focus group discussion with teachers.

A central theme emerging from the early discussions was the unanimous call for a comprehensive briefing. This prelude was seen as imperative to set the stage for the subsequent workshops and sessions. The educators believed that understanding the briefing goals was paramount before diving into the practical aspects.

As the dialogue evolved, especially between the first and second days, there was a palpable shift in the discourse's tone. The initial day was marked by a collective enthusiasm, emphasising the potential benefits of the technological tools at hand. In contrast, the second day was tinged with a more pragmatic approach, addressing the very real challenges educators might face in their quest to integrate these tools.

A prominent concern that surfaced was the inherent skill gap. While the potential of the tools was undeniable, their effective implementation would hinge on the educators' proficiency and familiarity with them. Many expressed apprehensions about navigating

these tools, especially the high-tech ones, without a solid foundation or adequate support. This sentiment, while highlighting the challenges, also underscores the BCG project's importance in facilitating the necessary support structures and resources.

However, the discussion was not just confined to challenges. The educators voiced a significant appreciation for the flexibility offered by the proposed platform. They noted its adaptability, where based on the local context or available time, the platform could be tailored to suit specific needs. This customization factor was lauded as a potent asset, emphasising the BCG project's foresight in catering to diverse educational environments.

Interestingly, day two also saw educators advocate for a more layered approach to technology integration. While the first day leaned more towards immediate hands-on application, the subsequent day emphasised a step-by-step method. Starting with foundational tools, like simple online applications, and gradually progressing to more complex ones would ensure that the learning curve remains manageable.

By the end of the discussions, a consensus was evident. The educators were united in their belief that while challenges were inevitable, the benefits of technological integration, when done judiciously and with support, far outweighed the potential hurdles. The teachers recognized that with the right approach, a synergy between traditional teaching methods and innovative technological tools could revolutionise the educational landscape.

8. Course content recommendation and evaluation methodology

8.1. Course requirements and content

The development of this course was a concerted effort, built upon the detailed analysis of past activities and the insights derived from discussions among partners. This collaboration has crystallised into the **subsequent guidelines**:

- *Integration of Core Skills*: The course is structured around three foundational skills, which are critical for success in the creative domain: Strategic and Reflective Thinking, Creative process. Activities and content across modules should accentuate these skills. For educators, it's pivotal to discern which specific skill is being honed in each module, ensuring a comprehensive educational experience for the students.
- *Objective-Oriented Approach- working with briefs-*: Navigating the world of briefs is a pivotal aspect of the creative industry. They present both challenges and opportunities. This course aims to equip students with the necessary tools and methodologies to devise solutions for a provided brief, making it the focal point of their learning journey. It is the final goal of the course, and the thread which guides all

the activities in the course. Each activity will provide a skill needed to produce a solution for the provided brief at the end of the course.

- **Modular Structure:**
 - The course will be partitioned into distinct modules. This design not only facilitates smooth delivery but also allows educators the flexibility to customise according to their classroom needs.
 - Although each module can function independently, it is structured in a manner that ensures minimal dependence on preceding modules for content understanding.
- **Uniform Module Framework:** Every module will be architected with a consistent structure, encompassing an introduction, stipulated learning outcomes, inspirational content (like readings or videos), and one or more hands-on activities.
- **Emphasis on Reflection:** At the end of each module, students must be presented with reflection questions. Grounded in pedagogical research, reflection has been identified as a cornerstone of comprehensive learning. Reflection helps students understand what they have learnt, and if they have understood the main concepts of the module. Guiding questions help students to structure the reflection.
- **Workbook Compilation:** The outcomes of hands-on activities should be systematically compiled in a workbook. This approach is twofold:
 - It facilitates retrospection, allowing students to revisit prior tasks.
 - Assists students in crafting a comprehensive portfolio over time.
- **Assessment Paradigm:** The principal method of assessment leans towards introspective evaluation using reflection questions. These must align with the learning outcomes of the respective module. While there's no rigid assessment criteria for educators, promoting self-assessment and collaborative reflective discussion remains a course priority.
- **Supportive Materials for Educators:** Educators play a pivotal role in shaping the learning experience. Recognizing the diverse pedagogical methodologies and institutional norms that educators operate within, we abstain from setting rigid assessment criteria or rubrics for each module or task. This flexible approach acknowledges that assessment, in many instances, is subjective and influenced by an educator's unique perspective, the classroom dynamics, and institutional policies. However, to guide and support the educators, each task within the module is accompanied by suggested evaluation ideas. These ideas serve as a springboard, allowing educators to either adopt or adapt based on their individual teaching style and the specific learning environment they're in. This dual approach of offering guidance while preserving flexibility ensures the course remains both relevant and adaptable across diverse educational settings. Teachers will be endowed with an expansive toolkit, including:
 - Additional methodologies and teaching strategies.
 - Supplementary resources and readings to complement course content.

- Ideas for assessment, inclusive of potential rubric templates or frameworks. Though these are intended as recommendations, not strict directives, providing educators with the flexibility to adapt based on their pedagogical views and institutional norms.
- *Extended Exploration:* A repository of additional resources shall be available to students to delve deeper into the subjects. The potential of integrating industry contacts can also enhance real-world applicability and insights.
- *Language and Accessibility:* All course videos are accompanied by English subtitles, ensuring clarity, especially for non-native speakers. These subtitles further simplify the process of translating the course into various languages, enhancing its global reach.

Drawing upon the comprehensive research and guidelines formulated through our analysis and discussions, this document proposes a course structure that strategically aligns with the requirements and demands of the modern creative industry. A pivotal feature of this course structure is the clear definition of learning outcomes for each module. By emphasising tangible learning outcomes, we not only set clear expectations for the students but also enable them to be assessed objectively and effectively. Here's a detailed breakdown:

MODULE 1: Welcome

Description: Begin your journey with an in-depth tour of the course, introducing you to the rich content and structure of the modules ahead. Familiarize yourself with the comprehensive toolkit that houses all the essential tools you'll employ throughout the course.

Learning Outcomes:

- Familiarise yourself with the overall course structure.
- Understand the objectives and content of each module.
- Get acquainted with the toolkit and the tools it encompasses.

Tools & Methodologies:

- Course tour, offering insights into the content of each module.
- Toolkit introduction, showcasing and explaining all tools to be used during the course.
-

MODULE 2: Understanding the Creative Process. Diamond Thinking.

Description: Step outside of your discipline to see how collaboration can bring about exceptional results. This module offers insight from creative leaders and a case study to introduce the different roles and departments in a creative agency or studio.

Learning Outcomes:

- Understand how collaboration can drive results.
- Gain insight from creative leaders and a specific case study.
- Understand various roles in a creative agency/studio.
- Learn a specific creative process and identify personal strengths/skills within that.

Tools & Methodologies: Diamond Thinking.

MODULE 3: The Creative Brief

Description: Dive deep into the structure and essence of a creative brief, transforming it from a mere document into a springboard for your creative endeavours.

Learning Outcomes:

- Explore what a creative brief looks like.
- Define the importance of strategy.
- Learn the process of breaking down a brief.
- Understand the key elements of a brief: who, what, and why.

Tools & Methodologies: Breaking down the brief.

MODULE 4: Strategic and Reflective Thinking

Description: Inculcate a mindset that prioritises strategic and reflective thinking, fostering empathy and understanding for your target audience.

Learning Outcomes:

- Build strategic and reflective thinking into your work.
- Develop empathy and understanding of your audience.

Tools & Methodologies: Empathy mapping; The 5 Cs.

MODULE 5: Ideation Process

Description: Engage in stimulating workshops that introduce you to diverse stimuli and methodologies, helping you evaluate and refine your creative ideas.

Learning Outcomes:

- Understand the importance of drawing from various stimuli.
- Apply frameworks to assess idea value.

Tools & Methodologies:

- Ideation methodologies
- Atlas of Weak Signals
- Evaluating and refining ideas.

MODULE 6: Prototyping

Description: Get hands-on with prototyping, leveraging both traditional methods and cutting-edge digital tools to bring your ideas to life.

Learning Outcomes:

- Understand the importance of an entrepreneurial mindset.
- Gain hands-on experience with prototyping methods.
- Test and refine prototypes based on feedback.

Tools & Methodologies:

- Prototyping methods
- Digital prototyping tools
- Digital fabrication
- Prototyping using programming and basic electronics.

MODULE 7: Pitching

Description: Combine all your learning to create and present a compelling pitch that resonates with audiences and sells your creative vision.

Learning Outcomes:

- Develop a pitch deck.
- Understand the significance of feedback.
- Learn to present ideas effectively to an audience.

Tools & Methodologies: Guidelines to create a pitch.

MODULE 8: Resources and Final Reflection

Description: Reflect upon your journey through the course, exploring additional resources to further your understanding and hone your skills.

Learning Outcomes:

- Consolidate your learning.
- Identify areas for further exploration and improvement.

- Reflect on your evolution throughout the course.

Tools & Methodologies: Resource exploration and final reflections.

This content and structure ensures a well-rounded development of students in the creative industry, offering them both theoretical knowledge and practical skills, all backed by clear, tangible, and assessable learning outcomes.

8.2. Assessment criteria for course activities

Overall, studying in this kind of course involves learning while practising. You learn a diverse set of skills which include both technical skills and artistic principles and gaining an understanding of the creative process.

Our comprehensive exploration has led us to the conclusion that the most effective form of assessment in these courses is an assessment that promotes learning (formative assessment). This kind of assessment focuses on giving students comprehensive feedback to enable learning. In our case, this is achieved by helping the students to reflect on what skills and which principles they are learning, and how to connect one to another.

To establish a robust assessment framework, alignment between course objectives, outcomes, and the assessment process is of paramount importance. This synchronisation requires a clear articulation of course objectives, which can be further divided into specific, tangible aims when necessary. Subsequently, the delineation of skills and tools to be practised and applied in achieving these aims sets the stage for effective assessment design. This kind of mapping facilitates the design of the assessment, both as self-assessment and for tutors.

The assessment we've developed addresses both ongoing progress (individual assessment of each module) and final outcomes (assessment of the whole course). First, we developed an assessment for the different units. This kind of formative assessment allows students and tutors to assess progress. It is used to inform further learning. This can be implemented in different ways, depending on how the course has been planned. It can be digital written tasks or short immediate verbal tasks. For instance, in BCG online course, online questionnaires are proposed. In addition, each activity is reported in an online notebook, which helps to evaluate how students build knowledge based on previous learning. Regardless of the method chosen, the assessment will help students to reflect on their progress and what they need to do to improve.

In this case, we recommend supporting the assessment by dividing surveys into pre and post questionnaires. Pre-surveys, in the form of concise questionnaires, allow students to gauge their knowledge and skills prior to embarking on each course unit. Subsequently, post-surveys encourage students to reflect on their practical experiences, enabling them to gauge their progress and newfound status. This comprehensive assessment strategy serves as a guide, effectively pinpointing areas of skill enhancement and development. An example of a post-questionnaire from one module of the course can be found in table 5.

Module 6: Prototyping and Making	
Learning outcomes	<ul style="list-style-type: none"> · Understand the significance of adopting the maker mindset. · Acquire hands-on experience with prototyping methods. · Test your prototyping by responding to your brief response. · Develop the skills and confidence to refine, defend, and rationalise your ideas effectively.
Post-questionnaire	<p>On a scale from 1 (totally disagree) to 5 (totally agree), grade yourself:</p> <ul style="list-style-type: none"> · I can explain what a maker mindset is. · I can list at least 3 benefits of a maker mindset in the creative industry. · I feel comfortable building a prototype for working with the briefing. · I have gained new skills related to prototyping. · I have gain skills related to electronics/programming

Then, a final assessment sums up students' achievements at the conclusion of the course. This summative assessment enables students to view their newly acquired skills and knowledge within a broader context. The modality of this final assessment can be tailored to the specific methodologies of the course, ensuring alignment with the overall learning experience. An example of mapping for learning outcomes and reflection questions can be found in table 6.

Course Learning outcome	Assessment tip (reflection/survey)
Develop a comprehensive understanding of the creative design process, from initial concept to final pitch.	How has your understanding of the creative design process evolved from the beginning of the course to now?
Apply critical thinking and problem-solving skills to generate innovative ideas and solutions.	<p>What specific techniques or tools have you found most valuable in generating innovative ideas?</p> <p>Reflect on a moment when you encountered challenges in the ideation or prototyping phase. How did you overcome these challenges?</p>
Acquire proficiency in utilising various tools, techniques, and frameworks within the creative design process.	How have you successfully integrated feedback and critique to refine your creative concepts?
Collaborate effectively with team members and stakeholders to develop and present creative concepts.	Describe an instance where effective collaboration with team members significantly enhanced the outcome of a project.
Strengthen communication and presentation skills for delivering compelling pitches to diverse audiences.	How have your communication and presentation skills improved throughout the course, particularly in delivering pitches?

Develop a comprehensive grasp of the holistic creative design process and its practical application in real-world scenarios.

In what ways has this course influenced your perspective on the role of creative design in addressing real-world challenges?

Consider the entire creative design process, from initial concept to pitching. How has your approach changed in terms of strategy, creativity, and execution?

Reflect on your growth as a creative designer. What areas have you seen the most significant improvement in? How will you continue to develop these skills beyond the course?

Table 6. Assessment tips

These general learning outcomes and reflection questions aim to encapsulate the overarching objectives of the course and encourage deeper contemplation about the learning journey and its impact.

Furthermore, in addition to the aforementioned reflection activities, students are encouraged to maintain a reflection diary throughout the course, documenting their experiences, insights, and progress in response to the tasks presented within the modules. This diary provides an avenue for self-assessment and introspection, enabling students to engage deeply with the creative design process. Moreover, this aspect of the course also offers tutors an opportunity to gain quantitative insights into students' journey by evaluating their responses and reflections within these tasks.

BCG final course consists of 7 modules, where 6 of them have around 3 tasks which need to be tackled in the BCG Workbook, a kind of reflection/activity diary. The process of aligning these tasks with the learning outcomes and how they can contribute to evaluating those outcomes for BCG final course can be summarised as follows. The information is presented per module. First, some general recommendations for evaluating the learning outcomes, and then, an example on how the evaluation of a task can be aligned to the learning outcome goal.

MODULE 2: The Creative Process

General recommendations for evaluating Learning outcomes

Learning Outcome 1. Define what the creative process is and its benefits: Evaluate students' case study reflections to ensure they accurately define the components of the creative process and articulate its benefits based on the case study context.

Learning Outcome 2. Discover what your creative process looks like and where your skills fit: Assess students' self-assessment in the skill matrix and their placement on the diagram to determine if they have a clear understanding of their skills and where they fit in the creative process.

Learning Outcome 3. Describe different roles within the agency structure and how they contribute to the creative process: Evaluate students' discussions and group interactions during the skill matrix activity to gauge their comprehension of various roles within a creative team and their contributions to the creative process.

Learning Outcome 4. Understand a worked example of the creative process: Examine students' case study reflections to ensure they grasp the key concepts and lessons presented in the example of the creative process.

Task Evaluation Mapping Example

Learning Outcome	Task evaluation
<p>Learning Outcome 1: Define what the creative process is and its benefits.</p>	<p>Task 1: Case Study Reflection: Tutors can evaluate whether students have identified and explained the components of the creative process as showcased in the case study. Additionally, assess whether students highlight the benefits of each component in the context of the case study.</p>
<p>Learning Outcome 2: Discover what your creative process looks like and where your skills fit.</p>	<p>Task 2 and 3: Skill Matrix: Tutors can assess students' self-assessment in the skill matrix and their understanding of how their skills align with different stages of the creative process. Additionally, evaluate their participation in group discussions to form balanced teams based on complementary skills.</p>
<p>Learning Outcome 3: Describe different roles within the agency structure and how they contribute to the creative process.</p>	<p>Task 2 and 3: Skill Matrix: Evaluate students' discussions about their preferred roles within a creative team and how those roles contribute to the overall creative process</p>
<p>Learning Outcome 4: Understand a worked example of the creative process.</p>	<p>Task 1: Case Study Reflection: Tutors can evaluate whether students demonstrate comprehension of the example of the creative process presented in the case study and their ability to discuss its application to real-life scenarios.</p>

MODULE 3: The Brief

General recommendations for evaluating Learning outcomes

1. Learning Outcome 1. Explore what a creative brief looks like: Evaluate students' one-sentence briefs created in Task 5 to ensure they accurately encapsulate the essential components of a creative brief.

2. Learning Outcome 2. Define what strategy is and its importance: Assess students' reflections on the strategic aspect of the brief in their synthesised one-sentence statements. Look for evidence of understanding the strategic significance of the "Why" component.

3. Learning Outcome 3. Discover your process of breaking down a brief: Evaluate students' reflections in Task 6 to gauge their comprehension of the process of breaking down a brief and its impact on their creative approach.

4. Learning Outcome 4. Identify and develop the who, what and why: Examine students' one-sentence briefs to ensure they appropriately identify and articulate the "What," "Why," and "Who" components of the brief.

Task Evaluation Mapping Example

Learning Outcome	Task evaluation
<p>Learning Outcome 1: Explore what a creative brief looks like.</p>	<p>Task 5: Breaking Down the Brief: Tutors can evaluate students' ability to apply Nick's technique to break down a creative brief into its essential components: What, Why, and Who. Assess whether students accurately synthesise this information into a concise one-sentence brief that effectively guides their creative project.</p>
<p>Learning Outcome 2: Define what strategy is and its importance.</p>	<p>Task 5: Breaking Down the Brief: Evaluate students' comprehension of the strategic aspect of a brief by analysing their ability to identify the "Why" component of the one-sentence brief. Assess whether students understand the significance of the strategic purpose in guiding the creative project.</p>
<p>Learning Outcome 3: Discover your process of breaking down a brief.</p>	<p>Task 5: Breaking Down the Brief: Assess students' application of Nick's technique and their reflections on how breaking down a brief impacts their creative approach. Evaluate their understanding of the process and its role in guiding their work.</p>

<p>Learning Outcome 4: Identify and develop the who, what and why.</p>	<p>Task 5: Breaking Down the Brief: Tutors can evaluate whether students accurately identify and articulate the "What," "Why," and "Who" components of the brief in their synthesised one-sentence statement.</p>
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MODULE 4: Research and Insights

General recommendations for evaluating Learning outcomes

Learning Outcome 1. Understand the brief and why digging deeper into your product/audience/client/culture matters: Assess the quality of students' Empathy Maps in Task 7 to determine whether they understand the significance of delving deeper into the audience's perspective for effective creative responses.

Learning Outcome 2. Step outside one's comfort zone and empathise with others: Evaluate students' ability to capture the thoughts, emotions, actions, and expressions of the chosen audience in the Empathy Map. Look for evidence of empathetic understanding.

Learning Outcome 3. Analyse the process of moving from research to insight: Assess the application of the "5 C's" framework in Task 8 to determine if students successfully gather and analyse information in the domains of Consumer, Category, Competitors, Channels, and Company.

Learning Outcome 4. Apply frameworks to help oneself to discover new creative ideas: Evaluate students' reflections on insights derived from the "5 C's" framework in Task 9. Look for evidence of innovative thinking and creative application.

Task Evaluation Mapping Example

Learning Outcome	Task evaluation
<p>Learning Outcome 1: Understand the brief and why digging deeper into your product/audience/client/culture matters.</p>	<p>Task 7: Empathy Mapping: Tutors can evaluate students' ability to create an Empathy Map for a specific target audience, assessing whether they effectively capture the audience's thoughts, emotions, actions, and expressions. Evaluate whether students recognize the importance of understanding the audience's needs and motivations.</p>

<p>Learning Outcome 2: Step outside one's comfort zone and empathise with others.</p>	<p>Task 7: Empathy Mapping: Evaluate students' application of empathy in creating the Empathy Map. Assess whether they have successfully put themselves in the shoes of the chosen person or group to gain insights into their perspectives.</p>
<p>Learning Outcome 3: Analyse the process of moving from research to insight.</p>	<p>Task 8: The 5C's: Tutors can assess students' ability to apply Ed's "5 C's" framework to their brief research. Evaluate whether students effectively investigate the areas of Consumer, Category, Competitors, Channels, and Company and extract valuable insights.</p>
<p>Learning Outcome 4: Apply frameworks to help oneself to discover new creative ideas.</p>	<p>Task 8: The 5C's: Evaluate students' use of the "5 C's" framework to identify opportunities for innovation based on their research findings.</p>

MODULE 5: Ideation

General recommendations for evaluating Learning outcomes

- 1. Learning Outcome 1.** Explore ways fresh thinking can impact the creative process: Evaluate students' participation in Task 10 to determine their willingness to engage in the creative warm-up exercise and generate multiple ideas within the time limit.
- 2. Learning Outcome 2.** Participate in a warm-up exercise designed to trigger new ideas: Assess the variety and diversity of ideas students generated in Task 10, and their reflection on the importance of challenging the initial ideas.
- 3. Learning Outcome 3.** Apply a tool to stimulate divergent thinking and inspire innovative ideas: Evaluate the quality of insights and opportunities identified by students in Task 12 using the Atlas of Weak Signals toolkit on Miro.
- 4. Learning Outcome 4.** Develop the skills to refine, defend, and rationalise one's ideas effectively: Assess the justification and selection process used by students to identify their strongest idea in Task 14. Evaluate their ability to critically evaluate and defend their choices.

Task Evaluation Mapping Example

Learning Outcome	Task evaluation
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<p>Learning Outcome 1: Explore ways fresh thinking can impact the creative process.</p>	<p>Task 10: Warm Up Apples: Tutors can evaluate students' willingness to explore multiple ideas within a short time frame through the apple drawing exercise. This task assesses their understanding of the value of generating numerous ideas and the impact of time constraints.</p>
<p>Learning Outcome 2: Participate in a warm-up exercise designed to trigger new ideas.</p>	<p>Task 10: Warm Up Apples: Evaluate students' engagement in the warm-up exercise, focusing on their willingness to challenge themselves by generating a variety of apple drawings in a short period.</p>
<p>Learning Outcome 3: Apply a tool to stimulate divergent thinking and inspire innovative ideas.</p>	<p>Task 12: Atlas Of Weak Signals: Tutors can assess students' engagement with the Atlas of Weak Signals toolkit on Miro. Evaluate their ability to identify emerging trends and opportunities through divergent thinking.</p>
<p>Learning Outcome 4: Develop the skills to refine, defend, and rationalise one's ideas effectively.</p>	<p>Task 14: Ideation Evaluation: Evaluate students' ability to critically evaluate and justify their brainstormed ideas. Assess whether they can apply evaluation criteria and make informed decisions about their strongest idea.</p>

MODULE 6: Prototyping and Making

General recommendations for evaluating Learning outcomes

- 1. Learning Outcome 1.** Understand the significance of adopting the maker mindset: Assess students' engagement in the optional electronic prototyping workshop (Task 16) and their comprehension of basic electronics concepts and IoT applications.
- 2. Learning Outcome 2.** Acquire hands-on experience with prototyping methods: Evaluate the extent to which students explored various prototyping methods and their engagement with hands-on experimentation in Task 15.
- 3. Learning Outcome 3.** Test one's prototyping by responding to one's brief response: Assess the quality of students' documentation and reflections in Task 15, focusing on their ability to effectively apply prototyping methods to their brief challenge.
- 4. Learning Outcome 4.** Develop the skills and confidence to refine, defend, and rationalise one's ideas effectively: Evaluate the depth and coherence of students' reflections in Task 17,

assessing their ability to identify key learnings, explain their prototyping methods, and justify their choices.

Task Evaluation Mapping Example

Learning Outcome	Task evaluation
<p>Learning Outcome 1: Understand the significance of adopting the maker mindset.</p>	<p>Task 16: If This Then That (optional workshop): Evaluate students' engagement with the optional electronic prototyping workshop and their ability to grasp the basics of electronics and IoT. Assess their openness to exploring new technologies.</p>
<p>Learning Outcome 2: Acquire hands-on experience with prototyping methods.</p>	<p>Task 15: Brief Challenge Prototyping: Evaluate students' ability to identify prototyping opportunities within their brief and their hands-on experience with various prototyping methods using the BCG Miro board. Assess the depth of their exploration and experimentation.</p>
<p>Learning Outcome 3: Test your prototyping by responding to your brief response.</p>	<p>Task 15: Brief Challenge Prototyping: Evaluate students' documentation of their prototyping process and reflections in the BCG Workbook. Assess their ability to apply prototyping to their brief response and the effectiveness of their chosen methods.</p>
<p>Learning Outcome 4: Develop the skills and confidence to refine, defend, and rationalise one's ideas effectively.</p>	<p>Task 17: Reflection: Evaluate students' ability to identify and articulate three key learnings from the module and how they apply them to their creative process. Assess their explanation of the prototyping methods used and their rationale for selecting a specific prototype for testing.</p>

MODULE 7. Pitching

General recommendations for evaluating Learning outcomes

Learning Outcome 1: Develop a pitch deck: Assess the quality and completeness of students' project pitch decks in Task 18, focusing on their ability to structure and present key content effectively.

Learning Outcome 2: Learn about the importance of feedback: Evaluate students' engagement in delivering their final pitch to various audiences in Task 19, emphasising the value of feedback and the learning experience.

Learning Outcome 3: Deliver the idea to an audience: Assess students' pitch delivery in Task 19, using the provided criteria to evaluate their ability to communicate the idea's inspiration, execution, and relevance.

Learning Outcome 4: Course Reflection: Evaluate the depth and thoughtfulness of students' reflections in Task 20, focusing on their ability to articulate key takeaways, reflect on the pitch process, and outline plans for future application and learning.

Task Evaluation Mapping Example

Learning Outcome	Task evaluation
<p>Learning Outcome 1: Develop a pitch deck</p>	<p>Task 18: Design Your Project Pitch Deck: Evaluate students' ability to design a comprehensive project pitch deck using the provided template. Assess their inclusion of key sections and their use of visuals to enhance the content. Emphasise the learning process over perfection.</p>
<p>Learning Outcome 2: Learn about the importance of feedback.</p>	<p>Task 19: The Final Pitch: Evaluate students' participation in delivering their final pitch to various audiences. Emphasise that feedback is encouraged and that the focus is on the learning experience rather than the pitch's outcome.</p>
<p>Learning Outcome 3: Deliver the idea to an audience.</p>	<p>Task 19: The Final Pitch: Evaluate students' delivery of their final pitch, using the provided criteria to guide the evaluation process. Assess their ability to communicate the inspiration behind the idea, the quality of execution, and the relevance to the intended purpose.</p>
<p>Learning Outcome 4: Course Reflection.</p>	<p>Task 20: Course Reflection: Evaluate students' reflections on their experiences and learnings from the pitching module using the BCG Workbook. Assess their ability to articulate key takeaways, reflect on the pitch process, discuss feelings about feedback, and outline plans for future application and learning.</p>

Quantitative Assessment

For each student's case study reflection, the tutor can assign a numerical score based on the extent to which the student demonstrates understanding of the key concepts and lessons presented in the example of the creative process. Here's a possible scoring rubric:

- Score 1: Little to no evidence of understanding key concepts or lessons from the example.
- Score 2: Limited understanding; some key concepts or lessons are recognized but not fully grasped.
- Score 3: Moderate understanding; some key concepts or lessons are recognized but not fully grasped.
- Score 4: Strong understanding; student clearly comprehends and articulates key concepts and lessons.

An example of this quantitative approach for self-assessment can be found in the following section, teamwork assessment.

Teamwork assessment

Finally, when teamwork is possible, analysing one's attitudes and processes within the team serves as a means of learning and enhancing personal performance in the future. Utilising self-assessment helps to organise such a reflective process. Within teamwork students need to reflect on how they agree with each of these statements, providing a rationale for their answer. It is important that students justify adequately their provided value in the scale and not only provide a number. We propose a set of questions for this purpose. The answer to each statement can be presented as a likert scale (as follows)

<i>Totally disagree</i>	<i>Somehow disagree</i>	<i>Somehow agree</i>	<i>Totally Agree</i>
1	2	3	4

- I have asked questions during the process, I have done research on the topic (e.g. find in internet aspects that I was not familiar with) and I have contributed to others' research (e.g. providing links, additional material...)
- I have actively participated in the discussion and I have contributed with a considerable number of ideas
- I have constructed my rationale based on others' points of view and I provided constructive feedback. (Build and create collaborative relationships)
- I have been able to clearly express my ideas and others have taken into consideration my points of view

8.3. Evaluation of course success

The success of any course, particularly in an online platform such as the BCG, is multifaceted. The effectiveness of a course is not solely determined by its content but is influenced by diverse factors, such as the facilitator's objectives and the setting in which the course is offered. For example, in the industrial sector, success might revolve around revenue generation, while academic institutions might prioritise quality teaching, time efficiency for educators, or the integration of novel pedagogies.

Determining the success of an online course like the BCG online course requires a clear understanding of the possible data collection tools. The primary sources of this data can be bifurcated into two categories:

Platform-Generated Data: The BCG platform inherently gathers a vast array of data. This encompasses metadata, which pertains to user interactions with the platform, like module completion rates, self-assessment participation, and more. Additionally, during registration, students provide specific information that offers insights into their backgrounds, geographic locations, and other demographics. This wealth of data allows for a comprehensive understanding of the participation dynamics and the course's traction among its intended audience.

Surveys: While platform-generated data offers quantitative insights, surveys cater to the qualitative aspects of course evaluation. Administered at the end of the course, these surveys are tailored to cater to three distinct stakeholder groups:

- **Students:** This group provides first hand feedback on their learning experience, the applicability of the content in real-world scenarios, and the course's impact on their skill development and career trajectory.
- **Academic Professionals:** As individuals who have critically examined the course content and possibly even tested it in their teaching environments, academics offer a unique perspective on the course's relevance, integration potential within curricula, and overall pedagogical quality.
- **Industry Experts:** Their feedback, rooted in practical industry experiences, sheds light on the course's applicability in real-world contexts, its relevance in meeting industry demands, and the overall quality from a professional standpoint.

Having established the sources of evaluation data, it's essential to delve into specific metrics that these data points can elucidate.

Metrics obtained from the platform. The platform in which BCG course is served offers a robust system to gather metrics on the success and impact of the course:

- *Completion Rate of the Course:* A critical metric is the percentage of students who finish the entire course. Our initial goal is a 60% completion rate. It's noteworthy that this rate is ambitious, given that MOOC courses often report significantly lower completion percentages (some studies present only 12% of completion rate).
- *Module Finalisation Rate:* Examining the completion rate for each individual module can provide insights into which sections might be more challenging or less engaging. Our target is for 60-70% of participants to complete each module.
- *Self-Assessment Participation:* At the conclusion of each module and the entire course, students are presented with self-assessment questions. Engaging with these questions is pivotal to the learning process. Of those who finish a module, we aspire for at least 80% to complete the self-assessment.
- *Participant Background:* Diversity in educational and professional backgrounds can enrich the learning experience for all. We hope to attract participants from various fields.
- *Geographical Diversity:* A testament to the course's global appeal would be its reach. Our ambition is to engage participants from at least 10 European countries within the first two years.
- *Certification Request Rate:* Should the course offer a certificate or badge upon completion, the rate at which students request this certification can be a strong indicator of its perceived value and relevance to their career progression.

Qualitative metrics collected through Surveys.

While platform-generated data offers quantitative insights, surveys cater to the qualitative aspects of course evaluation. Administered at the end of the course, these surveys are tailored to cater to three distinct stakeholder groups:

- **Students:** This group provides first hand feedback on their learning experience, the applicability of the content in real-world scenarios, and the course's impact on their skill development and career trajectory. For this group we gather two different surveys. One at the beginning of the course and one at the end. The initial survey captures a student's baseline understanding and expectations. After the course, the follow-up survey assesses perceived knowledge gains and satisfaction levels. By comparing responses, we can gauge the course's effectiveness and its impact on student learning outcomes. The surveys can be found from [Appendix 7](#).

Metrics

- Percentage of students showing an increase in confidence levels post-course.
- Number of students who felt more prepared for real-world challenges after completing the course.

- Changes in students' self-assessed understanding of core concepts from start to finish, with special focus in the three core skills.
 - Perceived quality of the course.
 - Percentage of students who feel the course will positively impact their career journey.
 - Most and least valuable modules as perceived by students.
 - Percentage of students able to name and detail at least two new methodologies or techniques they found valuable.
 - Number of students who believe they can integrate prototyping and making into their daily tasks.
- Academic Professionals: As individuals who have critically examined the course content and possibly even tested it in their teaching environments, academics offer a unique perspective on the course's relevance, integration potential within curricula, and overall pedagogical quality. The surveys can be found from [Appendix 7](#).

Metrics

- Percentage of educators who find the course material relevant to real-world scenarios.
 - Number of educators willing to incorporate course content into their teaching.
 - Educators' assessment of the course's utility in fostering strategic thinking, understanding the industry process, and instilling an entrepreneurial mindset.
- Industry Experts: Their feedback, rooted in practical industry experiences, sheds light on the course's applicability in real-world contexts, its relevance in meeting industry demands, and the overall quality from a professional standpoint. The surveys can be found from [Appendix 7](#).

Metrics

- Percentage of industry professionals who believe the course prepares students for real-world challenges.
- Number of industry representatives willing to encourage employee Aspects to Consider When Using Our Course Material Enrollment or consider corporate purchases of the course.
- Professionals' assessment of the course's relevance to industry scenarios and trends.

9. Recommendations for using the course and creating additional content.

The course material has been crafted with the intention of making high-quality education accessible to all. Whether you choose to use this material in its entirety or selectively integrate specific components into your courses, we hope you find it to be a valuable asset in nurturing the creative talents of students.

Aspects to Consider When Using Our Course Material

Although the material provided is self containing, and we offer different tips on how to implement the course, we encourage you to consider the following key aspects when using and/or adapting it for your own purposes:

1. **Course Objectives and Learning Outcomes:** The material suggests certain objectives and learning outcomes. However, we encourage you to clearly define the objectives of your own course and the desired learning outcomes you wish to achieve.
2. **Audience Profile:** You know your audience. Tailor the material to match the background, experience, and skill levels of your specific audience.
3. **Customised Course Structure:** Adapt the material to fit seamlessly within your course's structure, ensuring a logical flow of topics.
4. **Resource Accessibility:** Ensure that students have easy access to the provided learning resources, such as readings, videos, tutorials, and tools.
5. **Active Learning:** Engage your students in hands-on activities and projects that simulate real-world creative design scenarios.
6. **Alignment of Tasks:** Ensure that the tasks and projects you assign align with the intended learning outcomes for each module.
7. **Peer Collaboration:** When possible, encourage collaboration among your students through group projects and discussions. Implement feedback mechanisms to facilitate improvement.
8. **Reflective Practices:** Incorporate reflection activities and self-assessment questions after each module to help students consolidate their learning and identify areas for growth.
9. **Assessment Variety:** Utilise a diverse range of assessment methods, including self-assessment, peer assessment, instructor evaluation, and project-based assessments.
10. **Tutoring and Support:** Clarify your role as a tutor or instructor in providing guidance, feedback, and support throughout the course.
11. **Clear Evaluation Criteria:** Develop transparent and consistent evaluation criteria, including, when possible, rubrics for grading tasks and assignments.

Key steps for evaluating the course

We hereby provide some steps we suggest for creating a comprehensive evaluation plan that ensures the course effectively assesses the desired skills and learning outcomes while providing meaningful feedback to students.

1. **Establish Clear Learning Outcomes:** Define specific and measurable learning outcomes for the course. These outcomes should align with the course objectives and clearly state what students should be able to accomplish.
2. **Relevant Skills:** List the skills and competencies that students will develop throughout the course. This could include technical skills, creative skills, problem-solving abilities, etc.
3. **Module Selection:** Determine which modules or parts of modules are most relevant to assessing the identified skills and achieving the learning outcomes.
4. **Task Assessment:** Review the tasks within the selected modules to assess their suitability for evaluating the desired skills and learning outcomes.
5. **Task Modification (If Needed):** Modify tasks as necessary to ensure they align with the specific skills and learning outcomes you want to assess. Tailor tasks to your course's context and objectives.
6. **Alignment with Learning Outcomes:** Ensure that the assessment of each task is aligned with the established learning outcomes. Students should be able to demonstrate their achievement of these outcomes through task performance.
7. **Quantitative Evaluation (if applicable):** If you plan to quantitatively evaluate student performance, define clear criteria and rubrics for scoring. Consider how each task contributes to the overall evaluation.

Tailoring the course for industry training

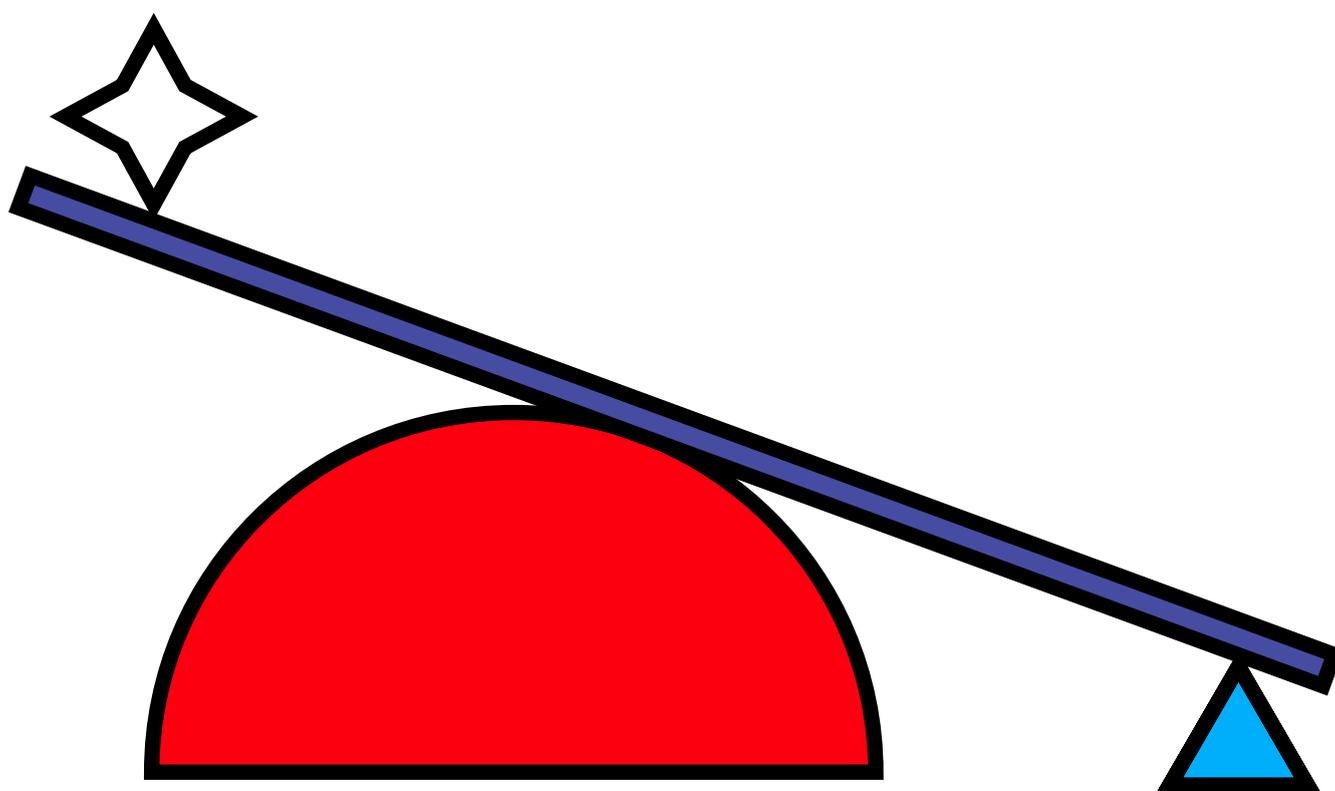
Finally, this course emphasises skills such as problem-solving, creativity, and project management. Many industries value and require employees with these skills, especially in areas like graphic design, advertising, marketing, product development, and innovation. Here are some suggestions on how such a course can be adapted for industry training:

1. **Customization of Modules:** Industry-specific examples, case studies, and projects can be incorporated into the course to make it more relevant to the particular needs of a given industry.
2. **Real-Life Projects:** Include real-life industry projects or simulations that reflect the challenges and demands of the specific field. The course offers many examples on this.
3. **Focus on Industry Tools and Software:** If there are industry-specific tools, software, or technologies that employees need to use, these can be integrated into the training.
4. **Expert Guest Speakers:** Inviting industry specific professionals as guest speakers can provide valuable insights and networking opportunities for trainees.
5. **Collaborative Projects:** Assigning group projects that require participants to work together to solve real industry-related problems or create solutions can foster teamwork skills.



6. Interdisciplinary Teams: Encouraging participants from different departments or roles within a company to work together on projects can promote cross-functional collaboration.
7. Networking Opportunities: Teamwork inherently involves communication and interaction, which can lead to valuable networking opportunities among participants.
8. Certifications and Credentials: Depending on the industry, the course can offer certifications or credentials that are recognized within that field.
9. Continuous Learning: This course can be easily tailored as continuous learning by adjusting the topics and the tools, to keep up with industry trends and advancements, ongoing training and professional development.

10. APPENDIX



10.1. APPENDIX 1. Pre-survey and post survey for educational events and project meetings.

Pre-activity Survey

1. Please, indicate how much you disagree/agree with the following statements concerning the meeting preparation *

	Completely Disagree	Fairly Disagree	Neutral	Fairly Agree	Completely Agree	Cannot provide an answer
1. Information about the meeting (ie schedule, goals, activities) has been sent to all partners in due time.	<input type="radio"/>					
2. The schedule and agenda of the meeting is clearly defined.	<input type="radio"/>					
3. The goals of the meeting is clearly defined.	<input type="radio"/>					
4. The activities / workshops / events of the meeting are listed in schedule with adequate detail.	<input type="radio"/>					
5. The proposed activities are aligned with the goal of the project.	<input type="radio"/>					
6. The role of each partner in the meeting is clear.	<input type="radio"/>					
7. The expected contribution of each partner is well defined.	<input type="radio"/>					
8. I had enough information to prepare the meetings (tasks for me were clearly defined, ...)	<input type="radio"/>					
9. My opinion was considered when organizing the meeting.	<input type="radio"/>					
10. I know which partners are participating in the meeting	<input type="radio"/>					
11. The agenda of the meeting is in line with what was promised within the consortium agreement (mark cannot provide an answer if the agenda is not defined)	<input type="radio"/>					

2. Write any thought you have related to the schedule, content and preparation of the meeting

Post-activity survey

1. Please, indicate how much you disagree/agree with the following statements concerning the meeting output *

	Completely Disagree	Fairly Disagree	Neutral	Fairly Agree	Completely Agree
1. Activities and tasks were executed as initially scheduled.	<input type="radio"/>				
2. All expected partners participated in the meeting.	<input type="radio"/>				
3. All the activities had clear goals defined before starting the activities.	<input type="radio"/>				
4. Intended activities' goals were met.	<input type="radio"/>				
5. Activities produced their expected outputs.	<input type="radio"/>				
6. Communication within the meeting was fluent.	<input type="radio"/>				
7. All partners participated actively in the meeting.	<input type="radio"/>				
8. All partners contributed as expected (they had prepared the material beforehand ...).	<input type="radio"/>				
9. Partners considered and took into account my contributions.	<input type="radio"/>				
10. The meeting has contributed to achieve the project goals.	<input type="radio"/>				
11. The results of the meeting are in line with what was promised in the consortium agreement	<input type="radio"/>				
12. Action points and tasks has been defined for all partners	<input type="radio"/>				
13. The meeting met my expectations.	<input type="radio"/>				

2. Write any thought you have in relation the schedule, content and dynamics of the meeting



3. Write any thought you have related to the outputs of the meeting

4. Discuss about any aspect of the meeting that should be improved or should be implemented differently

5. Open feedback

10.2. APPENDIX 2. Capturing course requirements, survey and focus group guiding questions.

Survey

1. What is your job role/title?

2. Which country do you predominantly work?

Tick all that apply.

Finland

France

Germany

Slovenia

Spain

UK

Other: _____

3. Which creative discipline do you typically work within?

Tick all that apply.

- Branding
- Advertising
- Illustration/animation
- Product design
- Visual communication
- Graphic design
- Service design
- Interactive design
- UX and UI
- Other: _____

4. Do you currently work in a creative agency/studio or for a brand as part of an 'in house' creative team?

Mark only one oval.

- Agency/studio
- In house
- Other: _____

5. Do you have any input in the hiring of new talent within your business/company?

Mark only one oval.

- Yes
- No
- Maybe

Outlined from previous research we have identified these eight topics as current skill gaps, of which we need your help to refine.

Collaboration - Working in multidisciplinary team/finding collaborators.

Making a prototype - How to test ideas and fail fast.

Strategy/Critical reflection - How to challenge and push new ideas.

Understanding industry processes - An insight into professional creative processes, from brief to broadcast.

Principles for using tech - make technology work for you and not for itself.

Entrepreneurial mindset - How to sell in new ideas and create opportunities.

Audience engagement - How to find universal truths and understand cultural relevancy.

Purpose and profit - Understanding how to balance good and work that does good - within the realities of a for profit industry.

6. Of these topic areas please select the three themes you feel there are underdeveloped skills in emerging creatives and the largest industry need. *

Tick all that apply.

- Collaboration
- Making a prototype
- Strategy/Critical reflection
- Understanding industry processes
- Principles for using tech
- Entrepreneurial mindset
- Audience engagement
- Purpose and profit
- Other: _____

7. With the huge disruption Corona virus has brought, to not just how we work but the type of work made, are there any skill gaps you are currently experiencing, or any skills that you predict new talent may need in the future?
-

8. In your opinion, are there any other topics that need to be addressed?
-

9. Based on your job now, what do you wish you'd learnt at the start of your career?'
-

FACILITATOR INSTRUCTIONS AND GUIDING QUESTIONS

Overview

The transition from education into industry is such an important step in a student's development. How we can best equip recent graduates for the start of their career within the creative industry. The outcome of this project is to produce a series of free resources and tools to help support young creatives during this time, and the main objective of this focus group is to help guide us in doing so.

Previous research has identified three main skill gaps that we are looking to address. Within this session we will delve deeper into these subjects to understand what specific skills students may need, what is currently being addressed within academia and what is not.

These subject areas are not discipline specific so it is important to understand how we can use this project as a stepping stone from academia into the real world of work.

Notes for facilitator

Aim of this final session is to really delve deeper into what specific skills we really need to address, then to explore how exactly this might be done and what success would look and feel like.

The questions within the diagrams are to act as prompts, feel free to pursue your own questioning and follow conversational routes.

Session timings

- 5 min Introduction to the session
- 10 min Individual participants introduce themselves
- 20 min Warm up question
- Enter Breakout rooms**
- 20 min Exploring skill sets
- 20 min Identifying success
(Highlight a point from each section to bring back to the group)
- 10 min Return to group + feedback
- 5 min buffer

miro

Guiding questions for recent graduates

Understand the challenge - Break out room

Q1. Can you describe certain situations regarding this subject area that you felt out of your depth?

Q2. Where did you learn these skills, from your workplace or did you find external support/resources?

Explore the opportunity - Break out room

Q3. What is the first thing you would tell someone graduating now?

Q4. Outside of your workplace and education how do you think we can best provide support to recent grads?

Q5. How would you know that the learning objectives had been achieved?

Guiding questions for tutors

Identify the skills gap - Full group session

Q1. What specific skills do you feel fall under these subject areas?

Q2. Is there anything that surprises you about this selection?

Understand the challenge - Break out room

Q3. How are these topics currently covered in academia?

Q4. What might make this subject difficult to teach?

Explore the opportunity - Break out room

Q5. Is there an opportunity outside more traditional academia to approach these subjects in a new way?

Q6. If you could cover these topics differently, how would you do it?

Q6. What insight, tasks and tools would be needed?

Q7. If you were to design a learning method to teach the subject directly to a student what would it look like?

Q8. How would you know that the learning objectives had been achieved?

Guiding questions for industry experts

Understand the challenge - Break out room

Q1. Where do you feel the greatest gaps lie? What are the specific skills?

Q4. What do you look for in a graduate to understand whether they currently do or do not have these desired skills?

Explore the opportunity - Break out room

Q3. How are you currently addressing this gap, what tools and techniques do you implement to bring junior creatives up to speed?

Q4. What are the specific insights or skills that you think are most vital for recent grads to know and how can we use this as an opportunity to share such knowledge?

Q5. How would you know that the learning objectives had been achieved?

Guiding questions for mixed focus group

What does this skill set look like - Break out room

Q1. What specific skills do you think are needed to tackle these challenge areas?

Q2. In your different experiences how have you seen or tackled these skill gaps? Within your own practice or supporting the practice of others?

Q3. Can you identify a time where a lesson/a teaching moment really stuck?

Identifying success - Break out room

Q4. What would you need to see to feel confident that a potential employee has these skills?

Q5. What would this look like in a portfolio?

Q6. What would you sound like in an interview?

Q7. How could this be demonstrated in the first few months of employment?

Strategy and critical reflection	Industry processes	Entrepreneurial mindset
Strategic thinking	Understanding of different departments	Basic business skills
Critical thinking and reflection	Unders. terminology and presentation formats	Understanding your purpose and values
Interpretation of the brief	Communication and collaboration skills	How to be a good mentee
Working for a client	Presentation and speaking skills	Resilience
Understanding the audience	Emotional intelligence	Understanding your mistakes and reiterating
Stepping out of your comfort zone	Planning, management and financial literacy-what everything costs	Understanding risk/risk assessment
Dive deeper into the subject area	Having a vision	Define your own identity - Personal branding
Challenging your bias	Team mentality - shared success and failures	Resourcefulness and willingness to constantly learn
Confidence to make mistakes	Build and create collaborative relationships	Inquisitiveness
How to build an argument	Communication skills	Leave your comfort zone
How to defend and justify decision making	Collaboration skills	Face new challenges
Confidence in being able to have an opinion	Emotional intelligence	Business literacy
X-thinking (Strategic thinking, Critical thinking, Reflective thinking, Empathy)	"Creative Industry" literacy <ul style="list-style-type: none"> • Understanding of different departments • Understanding terminology and presentation formats • Planning, management and financial literacy-what everything costs -> I would put this in business skills 	Entrepreneurial mindset
Rhetoric (Building arguments, Defend decisions, Counter-argument your own ideas: challenge your bias)		Resilience
Self-confidence (for making mistakes, to express opinions, to step out of comfort zone)		Building an identity
Understanding the process (Interpretation of the brief , Dealing with a client , Dive deeper into the subject area)	Having a vision	How to be a good mentee

10.4. APPENDIX 4. Final course assessment design

Module descriptions and self-assessment questions

Module 2 : The creative Process

LEARNING OUTCOMES:

In this lesson, you have...

- Defined what the creative process is and its benefits
- Discovered what your creative process looks like and where your skills fit
- Described different roles within the agency structure and how they contribute to the creative process
- Understood a worked example of the creative process

SELF-ASSESSMENT QUESTIONS:

On a scale from 1 (totally disagree) to 5 (totally agree), grade yourself:

- I can now identify concepts and principles of the creative process.
- I can now apply the concepts and principles of the creative process to my own work.
- I am able to identify areas where my creative process could be improved or refined.
- I can explain how different roles within an agency structure contribute to the overall creative process.

●

Module 3: The Brief

LEARNING OUTCOMES:

In this lesson, you have...

- Explored what a creative brief looks like
- Defined what strategy is and its importance
- Discovered your process of breaking down a brief
- Identified and developed the who, what and why

SELF-ASSESSMENT QUESTIONS:

On a scale from 1 (totally disagree) to 5 (totally agree), grade yourself:

- I can now prioritize and organize the information within a creative brief
- I am able of communicating the key elements of a brief to others involved in the creative process
- I am confident in my ability to create a well-structured and comprehensive breaking down of a creative brief

Module 4: Research and Insights

LEARNING OUTCOMES:

In this module, you have...

- Understood the brief and why digging deeper into your product/audience/client/culture matters.
- Step outside your comfort zone and empathised with others.
- Analysed the process of moving from research to insight.
- Applied frameworks to help you to discover new creative ideas.

SELF-ASSESSMENT QUESTIONS

On a scale from 1 (totally disagree) to 5 (totally agree), grade yourself:

- I understand the difference between doing research and having an insight.
- I feel comfortable practicing different techniques to empathize with the audience.
- I am confident in my ability to find and apply different frameworks for improving my creative process.

Module 5: Ideation

LEARNING OUTCOMES:

In this lesson, you have...

- Explored ways fresh thinking can impact the creative process.
- Participated in a warm-up exercise designed to trigger new ideas.
- Applied a tool to stimulate divergent thinking and inspire innovative ideas.
- Developed the skills to refine, defend, and rationalize your ideas effectively.

SELF-ASSESSMENT QUESTIONS

On a scale from 1 (totally disagree) to 5 (totally agree), grade yourself:

- I understand the importance of exercises designed to trigger new ideas.
- I am confident I can use feedback and critique to improve my own ideas.
- I have the tools to stimulate an ideation session.

Module 6: Prototyping and Making

LEARNING OUTCOMES:

In this lesson, you have...

- Understood the significance of adopting the maker mindset.
- Acquired hands-on experience with prototyping methods.
- Tested your prototyping by responding to your brief response.
- Developed the skills and confidence to refine, defend, and rationalize your ideas effectively.

SELF-ASSESSMENT QUESTIONS

On a scale from 1 (totally disagree) to 5 (totally agree), grade yourself:

- I can explain what a maker mindset is.
- I can list at least 3 benefits of a maker mindset in the creative industry.
- I feel comfortable building a prototype for working with the briefing.
- I have gained new skills related to prototyping.
- I have gain skills related to electronics/programming

Module 7: Pitching

LEARNING OUTCOMES:

In this lesson, you have...

- Developed a pitch deck.
- Learnt about the importance of feedback.
- Delivered the idea to an audience.

SELF-ASSESSMENT QUESTIONS

On a scale from 1 (totally disagree) to 5 (totally agree), grade yourself:

- I can describe the process of elaborating a pitch.
- I have increased my ability to create a compelling and persuasive pitch deck.
- I feel more comfortable delivering an idea to an audience.

Common reflection for each module:

- Enumerate three things you have practised in this module.
- Can you think of one thing that was new for you in this module?
- Come up with at least one aspect of your current professional practices that may change based on what you have learnt in the module. What thing/s would you do differently?
- What aspect/concept/methodology of the module attracted your interest? What else would you like to know about it?

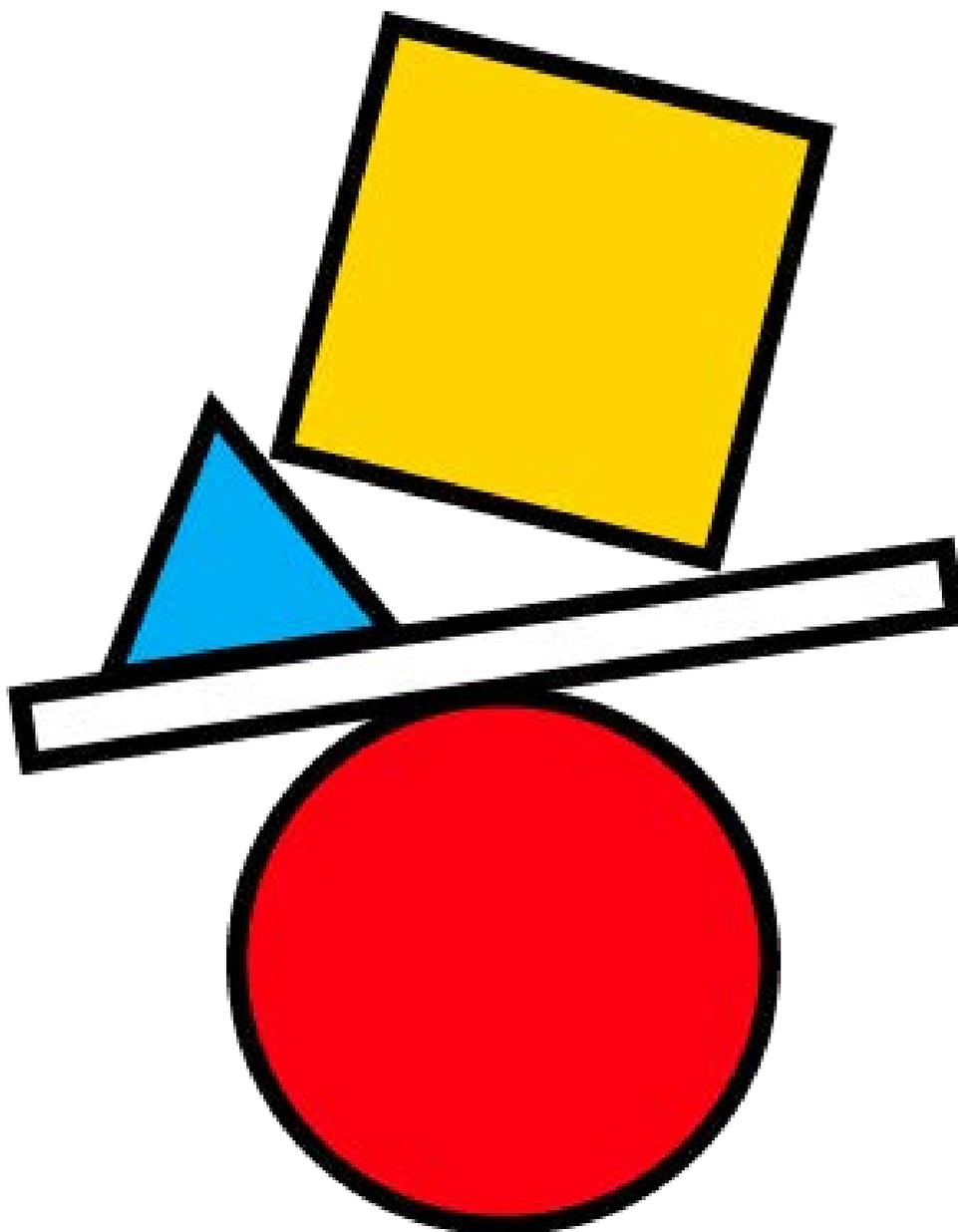
General Reflection Questions:

- How has your understanding of the creative design process evolved from the beginning of the course to now? Try to enumerate the different steps you have gone through
- What specific techniques or tools have you found most valuable in generating innovative ideas? Can you enumerate all the techniques you have practised?
- How have you successfully integrated feedback and critique to refine your creative concepts?
- Reflect on a moment when you encountered challenges in the ideation or prototyping phase. How did you overcome these challenges?
- Describe an instance where effective collaboration with team members significantly enhanced the outcome of a project.
- How have your communication and presentation skills improved throughout the course, particularly in delivering pitches?



- In what ways has this course influenced your perspective on the role of creative design in addressing real-world challenges?
- Consider the entire creative design process, from initial concept to pitching. How has your approach changed in terms of strategy, creativity, and execution?
- Reflect on your growth as a creative designer. What areas have you seen the most significant improvement in? How will you continue to develop these skills beyond the course?

10.5. APPENDIX 5. Activity 3 Surveys



Students pre activity survey

2. Please, indicate how do you agree or disagree with the following statements *

	Disagree	Somehow disagree	Somehow agree	Agree
I know the objectives of this training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am familiar with the learning goals of this training session *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel motivated to participate in this training *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident that I will perform well in this training *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Write down your expectations for this training. What would you like to do? What would you like to learn? *

4. Could you define in one sentence what "Maker" means? *

5. Mark down the processes or technologies that you have used in the past *

- | | | |
|--|---|--|
| <input type="checkbox"/> 2D design / Vector graphic | <input type="checkbox"/> 3D modelling | <input type="checkbox"/> Laser Cutting |
| <input type="checkbox"/> Vinyl Cutting | <input type="checkbox"/> 3D Printing | <input type="checkbox"/> CAM (e.g. CNC router) |
| <input type="checkbox"/> Designing electronics | <input type="checkbox"/> Soldering / fabricating circuits | <input type="checkbox"/> Software development (for computers or laptops) |
| <input type="checkbox"/> Software development (embedded programming, Arduino boards ...) | | |

6. Self-asses your competence (from 1 to 10) in the following skills

Strategy and critical reflection

Self-Assessment (1-10) _____

Specific skills of the creative industry (e.g terminology, methodologies, presentation skills, communication ...)

Self-Assessment (1-10) _____

Entrepreneurial mindset

Self-Assessment (1-10) _____

Students end day survey.

For each activity:

2. Please, indicate how do you agree or disagree with the following statements

	Disagree	Somehow disagree	Somehow agree	Agree
I have understood correctly the objectives of the activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I have understood and applied correctly the required methodologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have had enough support from tutors and project staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This activity has supported the development of the solution of the brief	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Which of the following competences, within the context of STRATEGY AND CRITICAL REFLECTION, do you think you have trained *

- | | | | |
|---|---|--|--|
| <input type="checkbox"/> Strategic thinking | <input type="checkbox"/> Understanding the audience | <input type="checkbox"/> Interpretation of the brief | <input type="checkbox"/> Working for a client |
| <input type="checkbox"/> Critical thinking and reflection | <input type="checkbox"/> Stepping out of their comfort zone | <input type="checkbox"/> Dive deeper into the subject area | <input type="checkbox"/> Challenging their bias |
| <input type="checkbox"/> Confidence to make mistakes | <input type="checkbox"/> How to build an argument | <input type="checkbox"/> How to defend and justify decision making | <input type="checkbox"/> Confidence in being able to have an opinion |

4. Which of the following competences, within the context of INDUSTRY PROCESS, do you you have trained *

- | | | | |
|---|--|---|---|
| <input type="checkbox"/> Understanding of different departments | <input type="checkbox"/> Understanding professional terminology and presentation formats | <input type="checkbox"/> Collaboration skills | <input type="checkbox"/> Presentation and speaking skills |
| <input type="checkbox"/> Emotional intelligence | <input type="checkbox"/> Planning, management and financial literacy-what everything costs | <input type="checkbox"/> Build and create collaborative relationships | <input type="checkbox"/> Team mentality - shared success and failures |
| <input type="checkbox"/> Having a vision | <input type="checkbox"/> Communication skills | | |



5. Which of the following competences, within the context of ENTREPRENEURIAL MINDSET, do you think you have trained *

- | | | | |
|--|--|---|--|
| <input type="checkbox"/> Business literacy | <input type="checkbox"/> Understanding your purpose and values | <input type="checkbox"/> How to be a good mentee | <input type="checkbox"/> Resilience |
| <input type="checkbox"/> Understanding your mistakes and reiterating | <input type="checkbox"/> Understanding risk/risk assessment | <input type="checkbox"/> Define your own identity - Personal branding | <input type="checkbox"/> Resourcefulness and willingness to constantly learn |
| <input type="checkbox"/> Inquisitiveness | <input type="checkbox"/> Leave your comfort zone | <input type="checkbox"/> Face new challenges | <input type="checkbox"/> |

7. In your own words, how do you think this activity contributes to the solution of the brief *

8. Personal reflection. What worked well? What did not work? Which were the main challenges? Which were the main pitfalls? Which were the main successes?

Students final survey

2. Are you happy about your final pitch? What do you like most out of it? What would you like to improve? *

3. Order the activities from 1 to 5, considering how much they have influenced you achieving your final solution. (1- the most and 5- the least)

4. Would you recommend any activity / skill / practice that would have helped you to perform better in the pitch?

6. How do you evaluate your capability in the following competences, after the training

Strategic thinking

Self-assessment (1-10)

REPEAT FOR: Understanding audience, Interpretation of the brief, working for a client, critical thinking, stepping out of the comfort zone, dive deeper into subject area, challenging your bias, confidence to make mistakes, build an argument, justify decision making, understanding mistakes, understanding risk, define your own identity, resourcefulness and willingness to learn, inquisitiveness, leave your comments, face new challenges, understanding different departments, collaboration skills, presentation skills, emotional intelligence, planning, build and create collaborative relationships, team mentality, having a vision, communication skills.

7. How do you think the training has enhanced your understanding about skills required in the working life? How do you think this training has improved your employability? *

8. Did the training meet your expectations? *

Yes

No

10. Open comments and suggestions

Teachers beginning of the day survey

1. Please, indicate how do you agree or disagree with the following statements *

	Disagree	Somehow disagree	Somehow agree	Agree
I have a clear understanding of the outcomes and learning goals of today's training sessions *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have clear understanding of the activities that I will facilitate today *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a clear idea on how I am going to structure the different tasks *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel confident about my role today *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel motivated to facilitate today's sessions *	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Describe in one sentence what do you think is today's session outcome (what students should do / learn ...) *

3. Describe the tasks you are facilitating today, using just one sentence for each *

4. What are your expectations for today's training session? *

Teachers end of the day survey

For each activity:

1. Please, indicate how do you agree or disagree with the following statements

	Disagree	Somehow disagree	Somehow agree	Agree
I went carefully through the material before the activity started	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had time to prepare the activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information contained in the guidelines was enough to understand the goals and methodologies of the activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information contained in the guidelines was enough to prepare the activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information contained in the guidelines was enough to facilitate the activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The guidelines provided for the activity are aligned with the actual activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The activity has supported students while creating their solution to the brief	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The activity is timely with the creative process (that is, is scheduled in the right time for students)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The activity is correctly positioned in the double diamond (Discover)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Disagree	Somehow disagree	Somehow agree	Agree
I think students understood correctly the objectives of the activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think students understood and applied the methodologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. What additional support would you have needed within the activity?

3. Which of the following competences, within the context of STRATEGY AND CRITICAL REFLECTION, do you think students have trained *

- | | | | |
|---|---|--|--|
| <input type="checkbox"/> Strategic thinking | <input type="checkbox"/> Understanding the audience | <input type="checkbox"/> Interpretation of the brief | <input type="checkbox"/> Working for a client |
| <input type="checkbox"/> Critical thinking and reflection | <input type="checkbox"/> Stepping out of their comfort zone | <input type="checkbox"/> Dive deeper into the subject area | <input type="checkbox"/> Challenging their bias |
| <input type="checkbox"/> Confidence to make mistakes | <input type="checkbox"/> How to build an argument | <input type="checkbox"/> How to defend and justify decision making | <input type="checkbox"/> Confidence in being able to have an opinion |

4. Which of the following competences, within the context of INDUSTRY PROCESS, do you think students have trained *

- | | | | |
|---|--|---|---|
| <input type="checkbox"/> Understanding of different departments | <input type="checkbox"/> Understanding professional terminology and presentation formats | <input type="checkbox"/> Collaboration skills | <input type="checkbox"/> Presentation and speaking skills |
| <input type="checkbox"/> Emotional intelligence | <input type="checkbox"/> Planning, management and financial literacy-what everything costs | <input type="checkbox"/> Build and create collaborative relationships | <input type="checkbox"/> Team mentality - shared success and failures |
| <input type="checkbox"/> Having a vision | <input type="checkbox"/> Communication skills | | |

5. Which of the following competences, within the context of ENTREPRENEURIAL MINDSET, do you think students have trained *

- | | | | |
|--|--|---|--|
| <input type="checkbox"/> Business literacy | <input type="checkbox"/> Understanding your purpose and values | <input type="checkbox"/> How to be a good mentee | <input type="checkbox"/> Resilience |
| <input type="checkbox"/> Understanding your mistakes and reiterating | <input type="checkbox"/> Understanding risk/risk assessment | <input type="checkbox"/> Define your own identity - Personal branding | <input type="checkbox"/> Resourcefulness and willingness to constantly learn |
| <input type="checkbox"/> Inquisitiveness | <input type="checkbox"/> Leave your comfort zone | <input type="checkbox"/> Face new challenges | |

6. In your own words, how do you think this activity contributes to the solution of the brief

7. Personal reflection. What worked well? What did not work? Which were the main challenges? Which were the main success.

Summary of status:

These are general questions about the training

15. Did today's training meet your expectations?

Yes

No

17. Do you think the training session goals have been achieved?

Yes

No

19. Explain in one or two sentences, the status of the students solution. Are they in the right track? How could you support them better? *

20. Open comments and suggestions

10.6. APPENDIX 6. Activity 3. Assessment Guidelines.

Jury (mentor) final pitch assessment guidelines and assessment card

About the pitch

This pitch is the final result of the three-day training organized within the Bridging the Creativity Gap project. During the pitch, students must present their proposed solution for the [brief](#) introduced during the first day.

For the development and elaboration of the idea / prototype students should use the processes and methodologies presented during the training. These methodologies bring together traditional tools from the creative industry and processes utilized by the Maker community.

The aim of this training is to improve certain skills and competencies that have been pointed out as key assets for communication and design students in the creative industry. The pitch should demonstrate a certain level of expertise in the skills and competences summarized in the section *Skills and Competences* (below).

As a mentor, you will have to evaluate the final pitch from two perspectives. Firstly, from your own professional experience: How do you see the quality of the pitch within a professional environment? How would you react to this pitch in your professional environment? What are the main pitfalls and wise moves? How can it be improved? Secondly, we would like you to assess the pitch within the Bridging the Creativity Gap philosophy and goals: Can you see the targeted skills and competences presented in the pitch? Is there any novelty that you have not seen in your previous assessment tasks (especially when working with students)?

It is important to emphasize that it is impossible to expect a professional and completely finalized product due to the lack of time, and that in the end, participants are just students without professional experience. The product presented in the pitch is the result of just one or two iterations, without much time for discussion and feedback. However, we expect the training to provide good foundations for the creation of a professional product when students are given adequate time and mentorship. In this training, we are exploring new methodologies, so we are more interested in analyzing the journey from the brief to the final pitch, than in the final quality of the product.

In this document we suggest a set of guidelines that you can use in the assessment of the

pitch based on our project goals. However, these are just recommendations, and you do not need to follow them strictly. You are free to structure the assessment using your own criteria based on your professional expertise.

Objectives and Learning Goals

Students are able to interpret and analyze a brief.

Students are able to structure the creation process in different phases, using different and adequate methodologies in each phase.

Students are able to produce a professional sounding solution within the context of the brief, following the recommendations and producing the material required.

Students are able to present and defend in a convincing manner their solution, using proper terminology and adequate presentation modes.

Skills and competences

Throughout this training, the students have been participating in a set of activities designed to promote a number of key competences that can be grouped into a set of three skills, namely: *Strategy and critical reflection*, *Industry processes* and *Entrepreneurial mindset*. Those skills, and their associated competences, are listed in the tables below.

Strategy and critical reflection

Strategic thinking	Understanding the audience	Interpretation of the brief	Working for a client
Critical thinking and reflection	Stepping out of your comfort zone	Dive deeper into the subject area	Challenging your bias
Confidence to make mistakes	How to build an argument	How to defend and justify decision making	Confidence in being able to have an opinion

Industry processes

Understanding of different departments	Unders. terminology and presentation formats	Collaboration skills	Presentation and speaking skills
Emotional intelligence	Planning, management and financial literacy-what everything costs	Build and create collaborative relationships	Team mentality - shared success and failures
Having a vision	Communication skills		

Entrepreneurial mindset			
Business literacy	Understanding your purpose and values	How to be a good mentee	Resilience
Understanding your mistakes and reiterating	Understanding risk/risk assessment	Define your own identity - Personal branding	Resourcefulness and willingness to constantly learn
Inquisitiveness	Leave your comfort zone	Face new challenges	
Proposed assessment guidelines			
<ol style="list-style-type: none"> 1. Is the solution pitched meaningful? <ol style="list-style-type: none"> a. Does it meet the brief? b. Does it solve a problem? c. It is relevant? 2. Do presenters show good presentation skills? <ol style="list-style-type: none"> a. Do the presenters show adequate use of presentation tools? b. Do the presenters use adequate language and professional terminology? c. Look and Feel: Is the tone appealing? Is body language inviting? Are the presentation and images aesthetically pleasant? 3. Is the solution pitched appealing? <ol style="list-style-type: none"> a. Would I tell others about it? b. Would I pay for it? c. Has it made me think? d. Would I queue for it? e. What would be the reaction of the industry after the presentation? 4. Is there any original element you have not seen before (especially when working with students)? Which one? <ol style="list-style-type: none"> a. In the solution presented b. In the content of the pitch c. In the way it is presented 5. To what extent are the different skills shown in the tables above shown in the presentation? <i>You can use the table in the annex to mark the identified skills.</i> 6. Recommendation for improvement: <ol style="list-style-type: none"> a. How could the solution be improved? b. How could the pitch be improved? 7. General quality of the project. 			
ANNEX. Mentors' assessment card.			
Mentors assessment card.			



Mark the check boxes with ✓ if the criteria is clearly visible
Mark the check boxes with - if there is an important lacking
Leave empty otherwise or cannot be evaluated

Assessment card
<input type="checkbox"/> Meaningfulness <ul style="list-style-type: none"> <input type="checkbox"/> Meets the brief _____ <input type="checkbox"/> Solves the problem _____ <input type="checkbox"/> Relevancy _____ <input type="checkbox"/> Presentation skills <ul style="list-style-type: none"> <input type="checkbox"/> Adequacy of tools _____ <input type="checkbox"/> Professional terminology _____ <input type="checkbox"/> Look and Feel _____ <input type="checkbox"/> Attractiveness <ul style="list-style-type: none"> <input type="checkbox"/> Tell others _____ <input type="checkbox"/> Pay for it _____ <input type="checkbox"/> Made me think _____ <input type="checkbox"/> Positive industry reaction _____ <input type="checkbox"/> Originality and novelty <ul style="list-style-type: none"> <input type="checkbox"/> Presented solution _____ <input type="checkbox"/> Pitch content _____ <input type="checkbox"/> Presentation _____ <input type="checkbox"/> General quality of the project <input type="checkbox"/> Use of proper methodologies
Additional Comments
Recommendation for improvements. Best of the project.

Mark the check boxes with ✓ those skills clearly visible.
Mark with - those skills that are clearly lacking
Leave empty otherwise or cannot be evaluated

Strategy and critical reflection			
<input type="checkbox"/> Strategic thinking	<input type="checkbox"/> Understanding audience	<input type="checkbox"/> Interpretation of the brief	<input type="checkbox"/> Working for a client

<input type="checkbox"/> Critical thinking and reflection	<input type="checkbox"/> Stepping out of comfort zone	<input type="checkbox"/> Deeper into the subject area	<input type="checkbox"/> Challenging your bias
<input type="checkbox"/> Confidence to make mistakes	<input type="checkbox"/> Building argument	<input type="checkbox"/> Defend and justify decision making	<input type="checkbox"/> Confidence in having opinion

Industry processes

<input type="checkbox"/> Understanding of company structure	<input type="checkbox"/> Terminology and presentation formats	<input type="checkbox"/> Collaboration skills	<input type="checkbox"/> Presentation and speaking skills
<input type="checkbox"/> Emotional intelligence	<input type="checkbox"/> Management and financial literacy	<input type="checkbox"/> Build collaborative relationships	<input type="checkbox"/> Team mentality
<input type="checkbox"/> Having a vision	<input type="checkbox"/> Communication skills		

Entrepreneurial mindset

<input type="checkbox"/> Business literacy	<input type="checkbox"/> Understanding your purpose and values	<input type="checkbox"/> How to be a good mentee	<input type="checkbox"/> Resilience
<input type="checkbox"/> Recover from mistakes	<input type="checkbox"/> Risk assessment	<input type="checkbox"/> Personal branding	<input type="checkbox"/> Resourcefulness; desire to learn
<input type="checkbox"/> Inquisitiveness	<input type="checkbox"/> Leave comfort zone	<input type="checkbox"/> Face new challenges	<input type="checkbox"/> Be a good mentee

Evaluation guidelines for partners

Guidelines for partners

About the diary
<p>An activity/research/observation diary is a writing record of direct observations of an activity. It also includes thoughts, feelings and reflections of the observer throughout the process.</p> <p>During the different training activities, partners are requested to keep track of their observations and reflections in an activity diary. The aim of the diary is to capture challenges and successes of the different activities, trying to identify aspects that are working well, aspects that need to be improved, as well as, a short reflection or brainstorming on how activities could be improved. It is also important to try to identify the</p>

reason/s of pitfalls.

During BCG training we want to understand if the process and content are adequate for our project goals. Hence, it is important to focus the observation on the process, observe tutors and students, how they interact among them and how they interact with the environment. Observers should try identify participants feelings (frustration, anger, confusion, engagement, satisfaction ...) and the triggers for those feelings

The notes can be taken using written notes, voice notes, pictures and anything that can help to document the process. At the end of the day, all the notes must be gathered into the diary (see Annex 2). For each activity, include also a summary and conclusions on how activity might be modified.

In order to optimize resources each organization should fill one diary. If there are two observers from the same organization you must merge both observations. We provide a brief card, indicating the main aspects you should focus on during observation (Annex 1).

Recommendations for observation

Use the observation guidelines card (Annex 1) to recall what are the main points you should pay attention to and take notes.

Do everything in real time, do not leave it for later. You will forget the details. Try to write down your thoughts at the same time the triggering action is happening . If possible: take notes, take pictures, take voice notes. You can edit directly the diary if you want

Do not write down only a description of what you are observing, try to bring your thoughts to the diary. The diaries are not going to be shared, and are going to be used only within the project partners.

At the end of the day, notes should be ordered and moved to the diary document (if you have not done it in real time). Please, do it as soon as you can. The later you do it, the worse the notes will be. You will forge the details.

Aspects to consider during observation

Perception of student and teachers feelings. Do they express frustration, confusion or satisfaction? What is the triggering event/s that causes those feelings?

Students' engagement. Are students participating actively in the activities? Do they take initiative? Do they actively follow instructions from tutors? Do they collaborate with other participants in the same team?

Tutors guidance. Are tutors able to follow the provided instructions? Is the activity correctly structured? Are tutors under control? Do tutors feel insecure? How much support do tutors

need during the activity?
Student-tutor interaction. What is the role of tutors: do they act as facilitators or as student pairs? Is there fluent interaction between tutor-students? Can you observe misunderstandings? Do students follow tutor instructions or act freely?
Students' learning. Do students have in mind the brief during the different activities? Do you think students adopt a "maker mindset" during the different activities? Do students understand the concepts explained? Do the different activities have an influence on how they tackle the solution to the brief? Does the solution evolve after each activity (e.g. there are new ideas or modifications of preexistent ideas)?
What is working? What is not? Which were the main challenges? Is there a remarkable pitfall? How could the activity be improved?

Observation card

Activity
Aspects to consider during observation
<i>Perception of student and teachers feelings. Can you observe frustration, confidence ...?</i>
<i>Students' engagement. Do students participate actively in the activities?</i>
<i>Tutors guidance. Tutors facilitate the activity successfully.</i>
<i>Student-tutor interaction.</i>
<i>Students' learning. Effects of the activities in the development of the brief solution.</i>
<i>What is working? What is not? Remarkable pitfalls? Main challenges? How could the activity be improved?</i>

10.7. APPENDIX 7. Course surveys

Students survey at the beginning of the course.

1. How did you learn about the course?
 - a. My company recommended it
 - b. My university recommended it
 - c. I found it in a search engine
 - d. I found it from social media
 - e. A colleague / friend recommend it
 - f. Other: Please, specify
2. What is your background
 - a. I am student in a field of the creative industry
 - b. I am a recent graduate in the a field of the creative industry
 - c. I am an expert in a field of the creative industry
 - d. None of the above. Please, specify
3. How would you define yourself professionally? You can choose several options
 - Visual designer
 - Industrial designer
 - Advertising agent
 - Graphic designer
 - Art director
 - Fashion designer
 - Illustrator
 - Multimedia Artist
 - User Experience (UX) designer
 - Architect
 - Interior designer
 - Marketing strategist
 - Content creator

- Creative Director
- Brand Strategist
- Other, specify

4. In which country are you currently living?

LIST OF COUNTRIES

5. What are your expectations for the course?

OPEN QUESTION.

6. How much understanding do you feel you had of strategic and reflecting thinking BEFORE you started this course?

SCALE 1-5

7. How much understanding do you feel you had of entrepreneurial thinking and maker mindset BEFORE you started this course?

SCALE 1-5

8. How much understanding do you feel you had of the creative process BEFORE you started this course?

SCALE 1-5

9. How much understanding do you feel you had of the design and advertising industries BEFORE you started this course?

SCALE 1-5

Students survey at the end of the course.

1. How much understanding do you feel you had of strategic and reflecting thinking AFTER you started this course?

SCALE 1-5

2. How much understanding do you feel you had of entrepreneurial thinking and maker mindset AFTER you started this course?

SCALE 1-5

3. How much understanding do you feel you had of the creative process AFTER you started this course?

SCALE 1-5

4. How much understanding do you feel you had of the design and advertising industries AFTER you started this course?

SCALE 1-5

5. On a scale of 1-5, how confident do you NOW feel about achieving your career aspirations?

6. Can you please explain your answer?

OPEN QUESTION

7. I feel more equipped to lead in my career after completing the course.

YES / NO

8. Can you please explain your answer? Which are the additional tools or skills that you obtained from the course that help to pursue your career goals?

OPEN QUESTION

9. I feel the course will positively impact my career journey.

YES/NO

10. Can you please explain your answer? How do you think industry would receive the new skills you have acquired in the course?

OPEN QUESTION

11. Likely, this course has provided a different set of methodologies and techniques than the ones you are familiar with. Could you describe which are the two most valuable new methodologies you have learnt and why?

OPEN QUESTION

12. Do you think you can integrate prototype and making in your daily tasks? How? When do you think this process is going to be more useful for you?

OPEN QUESTION

13. What are your main goals now that you have completed the course?

OPEN QUESTION

14. Do you feel this course has equipped you with the knowledge and tools to help achieve these goals?

YES/NO

15. Do you think this course helps to develop skills in the following themes:

- Strategic and critical thinking.
- Understanding the industry process
- Entrepreneurial mindset

LIKERT 1 - 5

16 As a whole, how valuable was the course?

SCALE FROM 0 to 10

17. Order the modules 2 - 7 in the course curriculum based on the value they have provided to you (most valuable first)

SORTING

18. Which is the module that you consider has provided more value? Why?

OPEN QUESTION

19. Which is the module that you consider has provided less value? Why?

OPEN QUESTION

20. We'd love you to summarise your experience of Bridging the Creative Gap in a few words or short sentences.

OPEN QUESTION



21. How likely would you be to recommend this course to others?

SCALE 1-5

22. FROM A SCALE OF 1-10 how would you evaluate this course.?

SCALE 1-10

Industry survey

1. How do you agree/disagree with the following statement (1 not agree at all - 5 totally agree)

Completely disagree	Disagree	Neither agree or disagree	Agree	Completely Agree
------------------------	----------	------------------------------	-------	---------------------

**The course
prepares
participants for
real world
challenges in the
creative industry.**

*

**The course
materials are
relevant and
applicable to real
world scenarios**



**in the creative
industry. ***

**Considering the
content and
objectives of the
course, my
agency/company
is willing to buy
this course to
educate my
young
professionals ***

**Considering the
content and
objectives of the
course, my
agency/company
is willing to
encourage my
employees/future
employees to
enrol in it**

2. From 1 to 5 how do you think this course helps to develop skills in the following themes?



Strategic and critical thinking *	
Understanding the industry process *	
Entrepreneurial mindset *	

3. If you have had time to go deeper in the different modules of the course, could you assess from 1 to 5 how well the different modules support young professionals in their career development?



Module 2: The Creative Process	
Module 3: The Brief	
Module 4: Research and insights	
Module 5: Ideation	



Module 6: Prototyping and Making	
Module 7: Pitching	

4. What improvements or additions would you suggest to further enhance the course's effectiveness in educating young talents on creative industry (specially when executing briefs)?

5. List few reasons why or why not you would recommend this course to other agencies / companies

6. From 0 to 10 how would you evaluate this course?

0 1 2 3 4 5 6 7 8 9 10

Academia survey:

1. In what of the following fields you are teaching? You can select several of them:

- Visual Arts (Painting, Drawing, Sculpture)
- Graphic Design
- Photography
- Film and Television
- Animation
- Game Design
- Performing Arts (Theater, Dance, Music)
- Creative Writing (Poetry, Fiction, Scriptwriting)
- Fashion Design
- Interior Design
- Industrial Design
- Architecture
- Art History
- Multimedia Design
- Web Design
- Product Design
- Advertising
- Journalism
- Music Production
- Art Education
- Creative Technology (VR/AR, Interactive Media)
- Other. Please, specify



2. How do you agree/disagree with the following statement (1 not agree at all - 5 totally agree)

Completely disagree	Disagree	Neither agree or disagree	Agree	Completely Agree
---------------------	----------	---------------------------	-------	------------------

The course prepares participants for real world challenges in the creative industry. *

The course materials are relevant and applicable to real world



**scenarios in the
creative industry. ***

**I am willing to utilize
the content and/or
activities in the course
in my own classes ***

**I would recommend my
institution to buy this
course if this option is
offered to us ***

3. From 1 to 5 how do you think this course helps to develop skills in the following themes?



Strategic and critical thinking

*

**Understanding the industry
process ***

Entrepreneurial mindset *



4. If you have had time to go deeper in the different modules of the course, could you assess from 1 to 5 how useful would be utilizing the following modules in your own course/s?

Module 2: The Creative Process	
Module 3: The Brief	



Module 4: Research and insights	
Module 5: Ideation	
Module 6: Prototyping and Making	

Module 7: Pitching

5. What improvements or additions would you suggest to further enhance the course's effectiveness in educating young talents on creative industry (specially when executing briefs)?

6. Could you briefly explain how would you integrate the content and activities of the course in your own teaching?

7. From 0 to 10 how would you evaluate this course?



0 1 2 3 4 5 6 7 8 9 10
