

# Vision on Teaching and Learning at TU Delft

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## Faculty Feedback

(April 2023 – October 2023)

An aerial photograph of the TU Delft campus. In the center, there is a large, modern amphitheater with a tall, white, conical tower rising from its center. The amphitheater is surrounded by green lawns and walkways. In the background, there are more campus buildings and trees under a clear blue sky.

**TU Delft has focused on the quality of education and lecturers in all sorts of ways, and it is reflected, in the Vision on Education from 2017.**

**However, with the ever-changing landscape there are various aspects to keep in mind to continually provide the best quality of education.**

**By creating a vision around teaching and learning we hope to provide a clear, up-to date perspective and an aligned view on teaching at TUD.**

**Furthermore, this vision should serve as inspiration to initiate actions towards a positive and inclusive study climate that focusses on wellbeing and growth for students.**

Faculty sessions were organized to get feedback on the in-development Vision on Teaching and Learning, Versions 3, 4 and 4.1 (VoTL). These were organised in collaboration with the Directors of Education, and numbers and composition of attendees differed per faculty. Attendees generally included programme directors, professors, lecturers (e.g. non-professors), academic advisors, and occasionally students, amongst others.

The following slides provide a snapshot of the discussion around the VoTL at each of the faculties. The notes made during the session, are categorised in terms of the **values** that emerged per faculty – in addition to or in alignment with the VoTL, **challenges** around addressing the vision in practice, corresponding **ideas** for implementation or development and lastly, general **questions** relating to teaching and learning.

The feedback gathered from the faculties, has informed draft version 5.0 of the Vision on Teaching and Learning. This will be taken forward towards the development of the future Vision on Education and into an implementation roadmap.

## Shared perspective of the future engineer

Socially responsible & aware, Ethical

Flexible, Adaptive

Critical thinkers, Problem solver

Continuous learner

Creative, Innovative, Ingenuity, Curious

Interdisciplinary, Multidisciplinary, Collaborative

Scientifically rigorous

Knowledgeable and Skilled – domain specific, about self & society

Reflective, Resilient

Inclusive, Open-minded, Humble, Empathic

Climate aware, Focused on Sustainability

Effective communicator

The presentation of the Vision on Teaching and Learning, led to various discussions around the **values** therein from the different faculties, most in alignment with the emerging direction of teaching and learning at TU Delft. Some of the values discussed repeatedly were related to the focus on **generating knowledge** as changemakers and critical thinkers at a technical university; the significance of **humility and ethics** as a responsible engineer; broadening interdisciplinarity to emphasise on **collaboration and group work**; and **diversity and inclusion** – acknowledging, celebrating, and promoting the strength in differences.

The discussion also pointed out various **challenges and questions** related to the **capacity** of educators, current **structures and systems** which are oftentimes rigid, and practicalities of **implementation**. Various **tensions** emerging from the vision and between the desired and current state of teaching and learning were also revealed. A few of these included the tension between **collective and personal growth**, or **inventorship versus impact**, and **excellence versus inclusivity**.

# Faculty Sessions

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Applied Sciences | 13.04.2023

Aerospace Engineering | 24.05.2023

Architecture and Built Environment | 26.05.2023

Civil Engineering and Geosciences | 07.06.2023

Mechanical, Maritime and Materials Engineering | 30.08.2023

Technology, Policy and Management | 13.09.2023

Industrial Design Engineering | 28.09.2023

Electrical Engineering, Mathematics and Computer Science | 11.10.2023



# Thematised responses to 'What is growth according to you?'

Based on 54 responses on Mentimeter

## Personal Development

- Being more mature
- Becoming more complete and secure
- Better version of oneself
- Independent thinker
- Staying ambitious
- Improving

## Reflection & Widening of perspective

- Failing forward
- Openness to other viewpoints
- Learning and development from other perspectives
- Accepting change
- Knowing and pushing boundaries

## ↑ Disciplinary skills and knowledge

- Sustainable increase and improvement of skills
- Developing hard and soft skills
- Developing deeper knowledge and critical thinking
- Measurable increase

## Societal Relevance

- Social development
- Sustainable development
- Adaptable

## Lifelong Learning

- Learning new things
- Open minded and curious
- Increase in ability
- Career long learning



## Discussion on the presented **Vision and Values**

- The importance of including **responsiveness** as part of a vision, not just social awareness, and the need to act on social issues.
- The need for education to go beyond knowledge acquisition and emphasize the **generation of knowledge**, with teachers playing a role in helping students make this transition.
- A shift towards **making implicit ideas explicit** and encouraging teachers and students to align with the values of the vision to enhance the overall environment and programme.
- A juxtaposition between **critical thinkers** and those who are **socially integrated or re-socialized**.

## Challenges:

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- **Programme Structure:** The existing programme structure (block by block) doesn't allow for "failing forward."
- **Timing of Skill Assessment:** There's a concern about testing students on crucial skills like subjectification too late in their educational journey.
- **Excellence:** Some feel that the concept of excellence is being overlooked, and there's a desire to see students achieve their personal excellence while considering the visual metaphor of "lowering the mountains." There's a recognized tension between **inclusivity and maintaining academic excellence**.

## Ideas:

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- **Systems Approach:** Emphasize the importance of a systems approach, understanding contexts, and one's role within them.
- **Interdisciplinarity:** Highlight the need to expose students to different perspectives, bridging the gap with disciplines like sociology.
- **Longitudinal Relationships:** Suggest building long-term interpersonal relationships with students as a method to achieve the vision, though it poses challenges due to the current education structure.

## Questions for further contemplation and reflection

1. This vision does not talk of assessment, and it does not seem to be reflected in the assessment policy/framework currently being used. Aspects like social awareness or subjectification are not assessed so far.  
*Formative assessment is provided.*
2. When will certain aspects of growth be achieved and whose responsibility is it? Does this mean we have to implement these into our courses, and do we have space in our programmes?  
*A systematic approach, taking programme structures into consideration can address student success and growth across the journey, rather than specific to a course.*
3. Is excellence absolute or relative? Is it moving forward from one point to another? And if so then what is the minimum bar that we want, considered we do not want to lose on the basic level of competence.
4. What is the weighting of the academic element, vs. the social elements (etc.) that we are adding?
5. If we implement this, does this narrow the gap between HBO and us in training students to go to industry?  
*It will still be HBO - implementing knowledge, Us – generating*
6. What is TU Delft's role in supporting us?

*\* Answers that came up in the discussion*

# Aerospace Engineering

24.05.2023



Aerospace Faculty (6 respondents on Mentimeter)



ASM Department (8 respondents on Mentimeter)

Most important traits of the **future engineer**

# Thematised responses to 'What is growth according to you?'

Responses from Aerospace Faculty and ASM Department (10 + 17 responses on Mentimeter)

## Personal Development

- Wisdom
- Becoming more disciplined
- First principal thinking
- Discover limits and push boundaries
- Setting goals and developing a strategy to achieve them
- Achieving of vision
- Acquiring new skills improving
- Well-being

## Reflection & Widening of perspective

- Awareness
- Not afraid of making mistakes
- Getting new insights
- Beyond the comfort zone
- Self-evaluation
- See the big picture

## ↑ Disciplinary skills and knowledge

- Deep understanding
- Maturing in a field
- Acquiring knowledge, understanding and skills
- Getting better at how to do things

## Adaptability

- Developing new approaches to dealing with situations.
- Willing and able to change approach
- Taking responsibility

## Lifelong Learning

- Learn how to learn
- Continued learning
- Life experience
- More students and more money

## Discussion on the presented **Vision and Values**

- **Handling Uncertainty and Societal Awareness:** Preparing students to work and make decisions in the presence of uncertainties. Emphasizing the awareness of and engagement with societal challenges.
- **Subjectification and Maturation:** Equating subjectification to personal and intellectual maturation.
- **Respect and Ethics:** Stressing the importance of respect and ethical behaviour in student interactions, particularly in group work.
- **Lecturer's Role in Motivation:** Recognizing the lecturer's role in motivating students to learn, even in self-motivated contexts.
- **Engineers as changemakers:** Acknowledging the role of education in shaping engineers who are creators and change-makers.
- **Feedback and Student Voice:** Valuing the input and feedback from students as an integral part of the education culture.

## Discussion on the presented **Vision and Values**

- **Technology proficiency (Modelling and simulation), critical thinking, systems thinking and scientific depth:** Emphasizing the importance of students being well-versed in these aspects.
- **High quality education for Science, Creativity, and Technology:** Striving for excellence in science, engineering, and future design. Highlighting the connection between science and creativity as the basis for technological advancements.
- **Knowledge Creation:** Differentiating between knowledge and information and stressing the value of using and creating knowledge.
- **Interdisciplinary Knowledge:** Encouraging a "T-shaped professional" who possesses basic knowledge in various disciplines.
- **Social Acceptance:** Acknowledging the need to improve the social acceptance of engineering and other fields, including social sciences.
- **Rigorous Problem-Solving, curiosity and functional arrogance:** Promoting a mindset of "it can be done" rather than dismissing challenges prematurely. When something cannot be done, that's where it starts. Encouraging a rigorous approach to problem-solving without shortcuts.

## Challenges:

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- **Lecturer Growth:** Highlighting an issue where some lecturers boast about low pass rates as a sign of a tough subject, rather than focusing on improving their teaching methods.
- **Course Difficulty:** Recognizing the challenge of improving courses, which can lead to increased difficulty, with each new batch of students.
- **Theory vs. Application:** Identifying the ongoing challenge of bridging the gap between theoretical knowledge and practical application in education.

## Ideas:

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- **Project-Based and Iterative Approach:** Advocates for a vision that promotes project-based design and an iterative approach to education.
- **Practical Components:** Stresses the need to incorporate more practical components into learning, alongside theoretical knowledge.
- **Design and Synthesis Skills:** Focusing on teamwork and practical problem-solving through design and synthesis courses.



## Questions for further contemplation and reflection

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1. What are the ramifications to be considered for failing forward? Is there room in our programmes to make mistakes or is it too packed? Teachers also lead by example and within the university structure is their space to try and fail?
2. Is it more the idea to achieve success quickly or rather learning by being allowed to fail?
3. Should engineering consider economic viability? Should we differentiate it from pure science, which is often market-independent?

# Architecture and Built Environment

26.05.2023



Most important traits of the **future engineer** (11 respondents on Mentimeter)

# Thematised responses to 'What is growth according to you?'

Based on 14 responses on Mentimeter

## Personal Development

- Being allowed to walk your own route
- Development into a more encompassing whole
- Make something and do what you support and get energy from
- Setting own personal goals

## ↑ Disciplinary skills and knowledge

- Knowledge building
- Developing skills and competencies both technical and social
- Gaining insights and skills in a subject
- Learning to think like a designer/scientist
- Building on what we know
- Developing professionally

## Reflection & Widening of perspective

- Self-knowledge and self-awareness to have more impact
- Being able to fail and look back on it with a smile
- Developing one's own reflective process
- Developing social consciousness

## Discussion on the presented **Vision and Values**

- **Humility:** Acknowledging that engineers cannot solve all problems despite the attitude that they can.
- **Reflection:** Emphasizing the importance of learning from the process. Highlighting the different forms of reflection - *personal, interpersonal, or professional* and their potential impact on individual and collective growth.
- **Growth as an Iterative and Measurable Process:** Recognizing the value of an iterative approach and highlighting that growth is not a one-time event. Furthermore, growth is quantitative, wherein it should be measurable.

## Challenges:

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- **Terminology Confusion (Growth vs. Development):** The challenge of potential confusion or misinterpretation between the terms "growth" and "development" and their implications for the vision.
- **Stress and Perception of Reflection:** The challenge of students perceiving reflection as an additional stressor or task to complete.

*\* A major portion of the discussion at BK focused on the meaning and terminology of growth and development.*

## Ideas:

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- **Role of Support Staff:** in addition to a support and advisory role, support staff are also a kind of oil in the machine and make a connection to keep the entirety of teachers, departments and management together and move in the same direction. .
- **Vision on Leadership:** What also seems very valuable is to include our vision on leadership. What type of leadership suits TU Delft, if we want to be able to train the engineer of the (near) future, who is resilient, responsible and proactive? Type of leadership in all management layers, but also leadership that the teachers show in guiding their students.

## Questions for further contemplation and reflection

1. What is the difference between individual growth and collective growth?
2. Is "growth" always seen as something positive, or should it be considered in a more nuanced way, especially in the context of engineering education?
3. What term, "growth" or "development," is more appropriate and effective for the vision, and should it be used in a quantifiable or qualitative sense?
4. How can the concept of "failing forward" be integrated into the idea of growth?  
*We do not mean you have to make people fail to grow but rather **they are able to grow from failing.***
5. How do we determine whether we have succeeded in achieving this vision?
6. Where are we now in terms of this vision and its components?

*\* Answers that came up in the discussion*

# Civil Engineering and Geosciences

07.06.2023



Most important traits of the **future engineer** (11 respondents on Mentimeter)

# Thematised responses to 'What is growth according to you?'

Based on 12 responses on Mentimeter

## Personal Development

- Become independent engineers
- Responsible engineers

## Societal Relevance & Adaptability

- Reflect, learn, adapt
- The capacity to adapt yourself to new environments or roles
- Increased impact
- Being able to deal with more complex and new situations

## ↑ Skills, Knowledge & Practice

- Gaining in-depth knowledge and skills and being able to put that knowledge to use.
- Learn and development new skills
- Building knowledge and practical experience

## Lifelong Learning

- Continuous development of competencies
- Continuous development of knowledge, skills, societal and interdisciplinary interaction (etc)



## Discussion on the presented **Vision and Values**

- **Reflection:** Building reflection into the educational process is important.
- **Ownership:** Students should feel a sense of ownership over their university experience, and that the university belongs to them.
- **Diversity:** There is a need to promote and support students to work in diverse groups.
- **Interdisciplinarity and responsibility:** A focus on interdisciplinarity learning can support responsible engineers of the future.

# Emerging challenges and Ideas

## Challenges:

- **Balancing Autonomy and Guidance:** A tension exists between wanting students to be independent and critical, with the need for guidance to show the importance of specific learning objectives and motivating them to engage in specific learning activities.
- **Measure of Growth:** The challenge of not being able to set a bar on student growth and the concept of growth being relative rather than absolute, makes it challenging to define and measure effectively. Also, the teacher often does not see the path, but only the snapshot in their course, presenting a challenge in observing or measuring student growth.
- **Lecturer development:** Lecturers are observed to stagnate in their development after a certain period, which poses a challenge for ongoing improvement. Furthermore, teachers face challenges related to reflection and teamwork as well.

## Ideas:

- **Student Choice for Ownership:** Allowing students to make choices in their program to enhance its relevance for them, and their sense of ownership.
- **Forms of Testing:** Improving testing methods to align with student rhythms and learning objectives.
- **Support for Self-Regulated Learning:** Supporting lecturers in facilitating self-regulated learning and incorporating autonomy and ownership as learning goals. Developing frameworks and trainings at educational programme level, not just the course level.

## Challenges (student related):

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- **Student Motivation:** There is an assumption that students are self-motivated, while in reality, they may need more guidance and support.
- **Student Passivity, Consumer Attitude and Sensitivity to Group Influence:** First and second-year Bachelor students are described as being passive, potentially influenced by a "consumer attitude." Students are also observed to be more sensitive to group influence, and require more instruction and guidance, possibly influenced by external factors such as the COVID-19 pandemic.
- **Navigating Group Work Challenges:** Students are primarily on an individual pursuit, and they are willing to engage in group work only if they see a personal benefit. There is also observed resistance to group work, and non-participating students may experience negative outcomes. Guidance and instruction are needed to help students handle group work effectively.

## Questions for further contemplation and reflection

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1. How can students be encouraged to become more critical and engaged in their own educational paths?
2. How can independence be balanced within the structure of an educational program?
3. How can student growth be effectively measured, given the various challenges to the definitive and effective measure of growth?
4. How can assessment match the rhythm of students, while ascertaining students worthy of the title?
5. How can teachers be developed effectively, considering their individual references, frames, and experiences?

# Mechanical, Maritime and Materials Engineering

30.08.2023

Transdisciplinary thinking

Staying curious

Dealing with complexity

Resilience

Engineering skills & knowledge

Integrity

Taking responsibility

Knows what's going to happen

## Personal Development

- Get to know your talents
- Independence
- Reaching potential

## Societal Relevance

- Less inequalities
- Making meaningful contribution
- Applying deep knowledge towards people

Most important traits of the **future engineer**

*(8 responses from group in person)*

Responses to **'What is growth according to you?'**

*(6 responses from group in person)*

## Discussion on the presented **Vision and Values**

- **Diversity and Inclusion:** Emphasizing the importance of diversity in talent and student abilities, with an open view on individual growth, recognizing that not everyone aspires to achieve the highest academic honors, and valuing personal ambitions and interests beyond academics.
- **Safe Environment:** Promoting a mentally safe and supportive environment that encourages open communication and dialogue among students, creating a space where they feel comfortable discussing their challenges and concerns.
- **Failing Forward and Innovation:** Encouraging a culture of "failing forward," where students are supported in their failures as a means to foster innovation and personal growth.
- **Flexibility in Education:** Acknowledging the evolving needs of students, who are accustomed to flexibility in their educational choices, and recognizing the potential to offer more flexibility at the university level, tailoring education to individual preferences and goals..

## Emerging challenges

- **Transferable skills:** The question of how to incorporate skills development like reflection into the curriculum given the time constraints.
- **Pass Rates:** Discussed as the most prominent measure for success in teaching. A stress factor for many teachers, as both extremes, too high or too few can impact students' success and preparedness.
- **Variations Across Faculties:** Differences in pass rates, cultures, and academic ambitions across faculties, lead to challenges in balancing the goals of the vision consistently across TUD.
- **Student Progress:** The role of grades in determining whether students continue their studies or not, and the challenge of helping students who may not see potential in continuing.
- **Systemic Pressures:** The system creates extra pressure on some students, for instance, financial constraints on international (Non-EU) students. Additionally, larger numbers of students in the future will influence the vision on how to act.

- **Personal Connections:** Identifying and providing support for students with varying needs, including those with extraordinary circumstances or those who may not want to be in their current programs, by establishing personal connections and helping them find the right track.
- **Teaching Reflection:** Incorporating reflection into education by being open and vulnerable in classes, leading by example, and making time for it, even if it's not a formal course. Recognizing the importance of reflection as a subjective tool for improvement.
- **Valuing Achievement and individual growth:** Recognizing that being at TUD is already an achievement and actively sharing experiences. Growth and success may look different for each student, it is important to focus on students' individual growth journeys.
- **Alternative Feedback:** Encouraging the use of alternative forms of feedback to help students understand where they stand in relation to their potential throughout their academic journey, building personal connections in the process.
- **Vision in Practice:** Implementing the educational vision by delving into specific topics, discussing them with colleagues, and having seniors participate in classrooms, promoting practical application and collaboration.



## Questions for further contemplation and reflection

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1. How do we assess growth? And what is the relevance of grades?

*Emphasis should be on personal growth journeys. Grades are also a way of acknowledging talent.*

2. Do teachers know how to practice personal growth themselves, to be able to preach based on practice?

3. How does the vision address university growth in terms of more students, multiple campuses?

*\* Answers that came up in the discussion*

# Technology, Policy and Management

13.09.2023



Most important traits of the **future engineer** (12 respondents on Mentimeter)

# Thematised responses to 'What is growth according to you?'

Based on 16 responses on Mentimeter

## Academic & Personal development

- Development of insight and behaviour
- Transformational experiences and insights, beyond fact knowledge
- Acquiring knowledge, skills and experiences usable for the next step
- Becoming a self-aware student (doing sports, teamwork, communicating, etc.)
- Wisdom
- Non-competitive

## Subjectification and Reflection

- Learning from mistakes
- Reflecting on one's behaviour
- Knowing yourself and feeling comfortable with who you are
- Understanding and reflecting on experiences, learning from shortcomings or problems
- Understanding the past and deciding for a new perspective and behaviour for a different future

## Self-Improvement & Inclusive

- Becoming more mature and aware on all levels (qualification, socialisation, subjectification)
- Growing into an independent thinker, learning how to think for yourself

## Community

- Accounting for oneself - combining excellence/ ambition with responsibility and empathy
- Being able to take the perspectives of others

## Discussion on the presented **Vision and Values**

- **Responsible:** Emphasizing responsibility that includes social aspects, ethical considerations, empathy, and morally driven principles.
- **Inclusive:** Recognizing the importance of inclusivity and diversity, especially in addressing issues like the recognition of diversity in technology.
- **Adaptive:** Valuing adaptability and the ability to deal with change.
- **Satisficing and Compromise:** Valuing the concept of "satisficing," where decisions are made to meet minimum requirements to achieve a goal, rather than seeking the optimal solution. Moving beyond a narrow focus on optimization and avoiding a technocratic approach where technology is controlled by a technical elite. Encouraging the consideration of various perspectives and compromises, while exploring multiple solutions without assuming one solution is universally applicable.
- **Systems Thinking:** Embracing a systemic approach that incorporates other disciplines and contexts, fostering awareness of different perspectives and surroundings. Recognizing the significance of political structures within socio-technical systems, indicating the interplay of technology and politics.
- **Reflection and Growth:** Recognition of the importance of reflection in fostering growth.

## Emerging challenges

- **Socialization and Exclusivity:** The challenge of socialization and community building potentially leading to exclusion and exclusive faculty identities that hinder inclusivity and diversity.
- **Diverse Student Backgrounds:** Students from different backgrounds have varied levels of socialization, which affects their qualifications and readiness when they join the university. Students may lack academic skills when entering the master's program and need to be provided support within a limited timeframe.
- **Resilience and Burnout Risk:** Terms like resilience may mask, or worse promote the risk of burnout amongst students.
- **Connecting Vision to Practice:** The challenge of relating the educational vision to practical implementation, for instance, teaching meta-cognitive abilities, connecting the vision to the entire student trajectory from start to finish, or clarity in defining a student-driven education model. Currently there is a gap between current practices and aspirational goals.
- **Senior Development Program:** The absence of a specific senior development program at TU Delft and the limited budget allocated for individual professional development.
- **Dual role of the teacher:** The double role of the teacher of teaching and evaluating becomes difficult.
- **Student feedback:** Current evaluations from student feedback haven't been effective. Forms of student feedback are also limited.

## Emerging Ideas

- **Explicit Socialization and Subjectification:** Making socialization and subjectification more explicit in the educational process to define the social and personal aspects of responsibility.
- **Promoting Collaboration and an Interdisciplinary Mindset:** Increasing the role of collaboration and interdisciplinary understanding among different engineering disciplines and sciences. Encouraging an interdisciplinary mindset without necessitating that all students take interdisciplinary courses.
- **Re-evaluating Grading:** Exploring options like eliminating grading or reducing it to pass/fail, as well as reconsidering the concept of cum laude. Experiment with teachers doing the teaching and others that do the grading.
- **Problem based teaching:** To foster ownership and responsibility
- **Vision in practice:** Create a timeline of what ambitions can be achieved within the current framework of the university and keeping in mind what already exists. Distinction between opportunities for academic development and innovating on education

## Emerging Ideas

- **Lecturer Development:**
  - Teachers and support staff are professionals with certain expertise. At the same time, it is good to **show vulnerability** to students and highlight that lecturers are also humans who are still learning.
  - Courses change over time and students also change over time. Lecturers should be provided with space and support for **continuous reflection** on their teaching.
  - Teaching together with other lecturers helps development- **learning by doing**.
  - Lecturers should think about how their courses fit on a higher (programme) level. Dialogue with colleagues from other courses to make sure the learning line is still sound. They should also start thinking beyond their course, to improve the **programme as a whole**.
  - Having **didactical experts** join in for educational advice and tips on the course.
- **Continuous feedback:** Encouraging different kinds of feedback and doing something with it. For instance, time & space to talk with students in a safe space asking for feedback, not just through survey forms.
- **Broader systems for Education:** Technical support to assess education. Expanding the view of education to include administrative task, Brightspace clarity, etc.

## Questions for further contemplation and reflection

1. Why did we choose the Biesta model and not another one? Should we express growth in terms of the different Biesta functions? Is this not getting too detailed/impossible to define?
2. What is typical for Delft? Do we need to have to be unique at TU Delft? Does our vision need to be different? Do we no longer have large scale education? Is there a common ground and what do we want as TU Delft?
3. Can it be Value driven rather than Responsible? Who defines values then?
4. What is our take on collectivism? What is done as a collective? What do we strive for
5. How do we integrate this in our education? Are we going to check our programmes on these aspects.  
*Yes, that would be ideal, on a programme goal/ high level.*
6. At a course level apart from learning objectives how can we address this?
7. There are people who prioritise research, etc. What is the base level of development that we mean then?



# Industrial Design Engineering

28.09.2023



Most important traits of the **future engineer** (23 respondents on Mentimeter)

# Thematised responses to 'What is growth according to you?'

Based on 26 responses on Mentimeter

## Self-awareness & Independence

- Knowing what you are good at, and where others are better
- Knowing the reason why you are here
- Mastering your learning goals
- Growth to self-consciousness and operating independently and sufficiently
- Feeling at ease with yourself professionally
- Discovering hidden talents and ambitions
- Reflect on your competencies
- Becoming aware of one's strengths, weaknesses, talents and acting on them

## Learning and Development

- Developing/ bettering yourself in all kind of directions, knowledge, skills and attitude
- Being better prepared
- Learning lifelong/ Learning new things
- Ability to reflect on yourself and learn what you could improve both as a person and looking at society

## Learning from mistakes

- Daring to fail after challenging yourself
- Being able to accept mistakes and learn from them
- Creative Confidence : Believing you can embrace any challenge, by a combination of skills, knowledge and attitudes

## Community

- Helping others
- Understanding that our well-being relies in others
- Opening to the world, communicate with others to develop own stance

## Curiosity

- Staying curious
- Discovering the unknown

## Discussion on the presented **Vision and Values**

- **Creativity, Critical Thinking, and Responsibility:** Critical thinking, exploring technical skills and communicating these are essential to being responsible, to be able to make decisions and is a common denominator in all programmes.
- **Communication and Curiosity:** Recognising the significance of effective communication, particularly for design students, and its relation to curiosity.
- **Productive Collaboration and group work:** Promoting a shift from individual-focused education to fostering more collaboration and flexible group work. Acknowledging the challenge of teaching productive collaboration and the potential of creating opportunities for it, such as organized serendipity (at coffee machines) or dream teams.
- **Translating Values into Practice:** Recognizing and adopting the institution's values. Highlighting the significance of translating these values from written principles into practical implementation within the classroom.

## Emerging challenges

- **Caveats to “failing”:** Students still need to get a diploma. Failure to fully engage with education or failure to take responsibility can hinder learning and student success.
- **Support for decision making:** Having the difficult conversations when students do not reach the wanted level and thus need to quit. Cultural background also has an impact on decision-making – family expectations, money etc. We fail in helping students reflect earlier in their journey, on if this is what they want, if this is the right place for them and showing options, for example going to HBO. We succeed in keeping them here.
- **Reduced student engagement in class:** Students often don't show up, despite positive course reviews. It's not possible to prescribe or mandate 'showing up', student's need to be given time and space. The lack of attendance maybe attributed to students not realising the value of socialisation, covid impact, mental health epidemic, or just a graduating effect in society.
- **Tension between excellence and inclusivity:** While we want to celebrate success, the current culture of excellence celebrates the 'best' coach, graduate or teacher, leading to ranking thinking. It also leads to a conflict between personal ambitions and excellence, with promoting a culture of community and collaboration.
- **Skewed student focus:** Students often focus on tests and trying to meet expectations, rather than learning, debating and taking risks. They tend to follow the rubric rather than pioneering change.
- **Programme constraints:** Planning of programmes is packed and there is no room to fail.

- **Framework for Creative Thinking:** Developing framework to include creativity and flexibility, possibly using archetypes or models of thinking.
- **Embracing the Value of Failure:** Encourage students to embrace the concept of failure as an opportunity for learning and personal growth, being open about the fact that failure is an integral part of the learning process.
- **Teaching Fundamental Skills:** Implement educational practices that teach students essential skills such as reflection, collaboration, effective communication, giving and receiving feedback, and understanding the purpose of feedback.
- **Personalizing the Importance and value of expertise:** Communicate the significance of each course or learning experience to students, making it personal and helping them relate the content to their context, focusing on the "why" behind their education. Shifting the focus from grades to developing expertise.
- **Supporting Autonomous Learning:** Promote autonomy in learning while also ensuring there are compulsory elements to maintain structure and engagement, such as attending classes.

- **Prioritizing Wellbeing:** Make student education enjoyable and fostering a sense of community and connection within the academic environment.
- **Supporting interactions:** Encourage interaction between students and lecturers, and an understanding of each other's backgrounds and experiences. Promote peer-based learning, not only among students but also among teachers, acknowledging the value of learning from each other, and fostering a social constructivist approach.
- **Collective Growth and Learning:** Explore educational models that prioritize collective growth and learning, challenging traditional approaches to education.
- **Growing and Reflecting as Teachers:** Develop strategies for teachers to continually grow and reflect on their teaching practices, to effectively impart these skills to students.
- **Rubrics and assessment:** Rubrics are objective rather than subjective, to avoid the risks of bias, etc., though formative feedback is way more interesting and useful. Modify rubrics to include personal growth and the individual journey, expanding beyond cognitive assessment.

## Questions for further contemplation and reflection

1. Do we teach how to do reflection productively? It can be quite harmful from a psychological perspective.
2. Should we abandon the BSA?
3. Should we stop grading? We can't make the difference between a 6 and a 7, but we can tell the difference between a 6 and a 10. There is personal judgment in marking.
4. What about the culture of being the best? We teach students how to pass tests not on how to work a process.
5. Failure means extra time but then you get a lower grade if you take extra time – what does this say about failure?
6. How should we celebrate our love for education & acknowledge that, beyond a ranking culture that celebrates individual success?

*Stories. Celebrate as a community.*

*\* Answers that came up in the discussion*

## Questions for further contemplation and reflection

7. How do we achieve and operationalise this vision? Can the Biesta Model be used as learning lines in all programmes?
8. Should we take on so many PhD candidates? We have 3000 by now.
9. What support do we have for teachers? What is the planning ahead? How to free up time for lecturers to do this?  
*We need to stop saying we (lecturers) don't have enough time especially directly to students.*
10. Should we lecture less?  
*Maybe but lecturers have expertise and framework that students don't have. Don't be so dismissive of lectures, they also have a certain purpose and is a different kind of learning.*
11. How do we keep striving for improvement, whilst also not showing who is the top?

*\* Answers that came up in the discussion*



# Electrical Engineering, Mathematics and Computer Science

11.10.2023



Most important traits of the **future engineer** (44 respondents on Mentimeter)

# Thematised responses to 'What is growth according to you?'

Based on 61 responses on Mentimeter

## Self-awareness & Development

- Knowing you and placing oneself in the bigger picture
- Intellectual emancipation
- Understanding one's present state and taking steps towards the desired direction
- Learning about oneself and improving from experience
- Overcoming challenges beyond one's comfort zone
- Becoming wiser, getting deeper insights into goals, limitations and passion and acting upon them
- Developing agency and resilience
- Reinventing oneself
- Empower yourself to be happy, flexible, social and impactful with your personal talents.

## Lifelong learning & Adaptability

- Owning mistakes and learning from them
- Continuously learning, reflecting and adjusting
- Learning from situations, and being able to deal with more situations
- Having an adaptive and resilient mindset and attitude
- Broadening perspective and overcoming differences between people
- Learning from personal experiences and of others
- Discovering

## Skills and knowledge

- Improving on skills, be it social or technical, to become more productive
- Knowledge, effectiveness, empathy
- Growth in understanding, skills
- Develop/ being able to learn new skills/ abilities
- Improve knowledge on science and life
- Develop a wider palette of teacher skills

# Thematized responses to 'What is growth according to you?'

Based on 61 responses on Mentimeter

## Responsibility & Reflection

- Taking (more) responsibilities
- Trying to be a good person that holds accountability and responsibility for their actions
- Become more acknowledgeable
- To be able to look back and reflect on changes you've experienced / implemented
- Reflection on your actions and acting on what you learn from it
- Critical of the way things are going and carefully improve.
- Empower yourself to be happy, flexible.

## Society

- Contribute to sustainable society
- Service to mankind
- Working for the betterment of the world
- Designing sustainable technical solutions
- Learning and imparting new knowledge and new challenges, with a strong societal relevance.
- Inspiring the next generation
- Empower yourself to be happy, flexible, social and impactful with your personal talents.

## Student oriented

- Empathize with the students
- Learning the student perspective and acting accordingly
- Better developer of students
- Understanding that students have a say in the process
- Understanding students' needs better
- Anticipating needs

## Discussion on the presented **Vision and Values**

- **Creativity and Inventorship:** This is something that brings pride and purpose to our engineers and justifies the 5-year process.
- **Integrating Technical and Social Skills:** Viewing technical and social skills as interconnected rather than separate components.
- **Embracing Diversity and Inclusion:** Certain examples presented with regards to the vision mentioning specific cultures, were challenged and rightly so, as it does not reflect the sentiment of diversity and inclusion. We must, acknowledge the impact of cultural backgrounds on teaching and learning and promote an inclusive learning environment that recognizes and values the differences among students and staff, emphasising the strength that diversity brings.
- **Interdisciplinary skills and context:** Promoting interdisciplinarity, wherein the mindset is towards contributing to common goals and learning from the process and each other. Stressing the importance of strong communication skills for effective collaboration within interdisciplinary contexts.
- **Collaboration and Groupwork:** Promote teamwork and group work as an ambition and a central theme in education, to build essential collaborative skills among students.
- **Individual Choice and Generalism:** Recognize that students' preferences for specialization or generalization should be a matter of choice, and generalists should not be equated with mediocrity. Supporting the development of T-shaped profiles for students, signifying their understanding of various disciplines alongside their core expertise.
- **Emphasis on Transformative Learning:** Highlight the significance of transformative learning and teacher-student co-creation of the educational process.

# Emerging challenges and Ideas

## Challenges:

- **Inventorship versus impact:** There is a paradox between innovating new things and working towards a better and meaningful future. Example that was given was of the wright brothers inventing the plane but nobody else knowing it had value.
- **Caution towards interdisciplinarity:**
  - Risking lack of proper monodisciplinary knowledge and expertise. You need to have a solid background in a monodisciplinary way.
  - Lack of awareness that you cannot do everything.
- **Interdisciplinarity outside the programme:** Such as Dream teams, internships etc. could be exclusive. These are not always inclusive or accessible, for example to international students due to visa, money etc.

## Ideas:

### Reframing Interdisciplinary to foster Collaboration and Group Work:

- Teaching interdisciplinary group work with the goal of **bringing people together**.
- Broadening the definition of interdisciplinary to include nurturing and promoting **intercultural and international collaborations**, beyond traditional disciplinary boundaries.
- Rather than creating a common language, emphasise the idea of understanding different "languages" through activities like teamwork, focusing on **effective communication**.
- Promoting different **forms of teams**, including lecturing, collaborative teacher-student, interdisciplinary, and intercultural project teams.
- Explore the **pillars of Design, Science and Engineering** as a hook for interdisciplinary thinking. Many fields encompass all three pillars, and it is more important to approach problems from each of these standpoints, than to work on interdisciplinarity at an interfaculty level.

- **Flexibility in Implementation:** Recognising the need for flexibility in the educational agenda, allowing for the removal of elements or the allocation of more time to achieve specific educational goals., rather than pushing an agenda
- **Teaching Students to Fail Forward:**
  - Introducing controlled challenges or "stumbling blocks" to help students learn how to fail forward. Ensuring these tasks won't impact their evaluation, possibly making the difficulty explicit and providing a supportive environment to take on difficult challenges.
  - Encouraging a more nuanced understanding of failure, recognizing that it can result from a lack of understanding or the pursuit of unsolvable problems.
  - Fostering a perspective that considers risks and potential solutions rather than a binary view of success or failure.

## Questions for further contemplation and reflection

1. Interdisciplinary work takes time. What are the costs we need to consider and in which fields do we need to take these costs on? We could be losing out on other aspects when making this decision.
2. How do you balance innovating new things which the world may not see as meaningful yet?
3. Does the management system, culture and current structure allow for the vision to be achieved? Who are the decision makers in this structure?
4. What is meant by the terms 'meaningful' and 'better' future, as described in the vision statement?