

Lecturer of the Future

Dr. ir. [Alexandru Iosup](#),
representing a whole team*



~~Lecturer~~ of the Future

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representing a whole team*



Internal Information, Major Technical University in the NL (Top-20 in the World*)

- “P-in-een” of an important BSc track <40%
- Completion in time of the BSc (# years + 1) <35%

- Vs China, Romania, South Korea, etc.?

Exercise: The Blame Game – Who is responsible?

- Team work, first 2 minutes
 1. Form team of 2-3 persons
 2. Think about own experience
 3. Convince your team before proposing an answer
- Open discussion, next 2 minutes
 - Tell everyone the answer

Q: Who is responsible for the current
outcome of higher education?

Voting on best answer

We're In This Together (My Answer)

- New generation of students
- New types of students, especially multi-culti
- It's not you, it's me
- New ambition of our faculty, but cannot select students



<https://quotablequoteunquote.files.wordpress.com/2008/08/walkingcomputergeek.jpg>

We're In This Together (My Answer)

- New generation of students



- New types of students

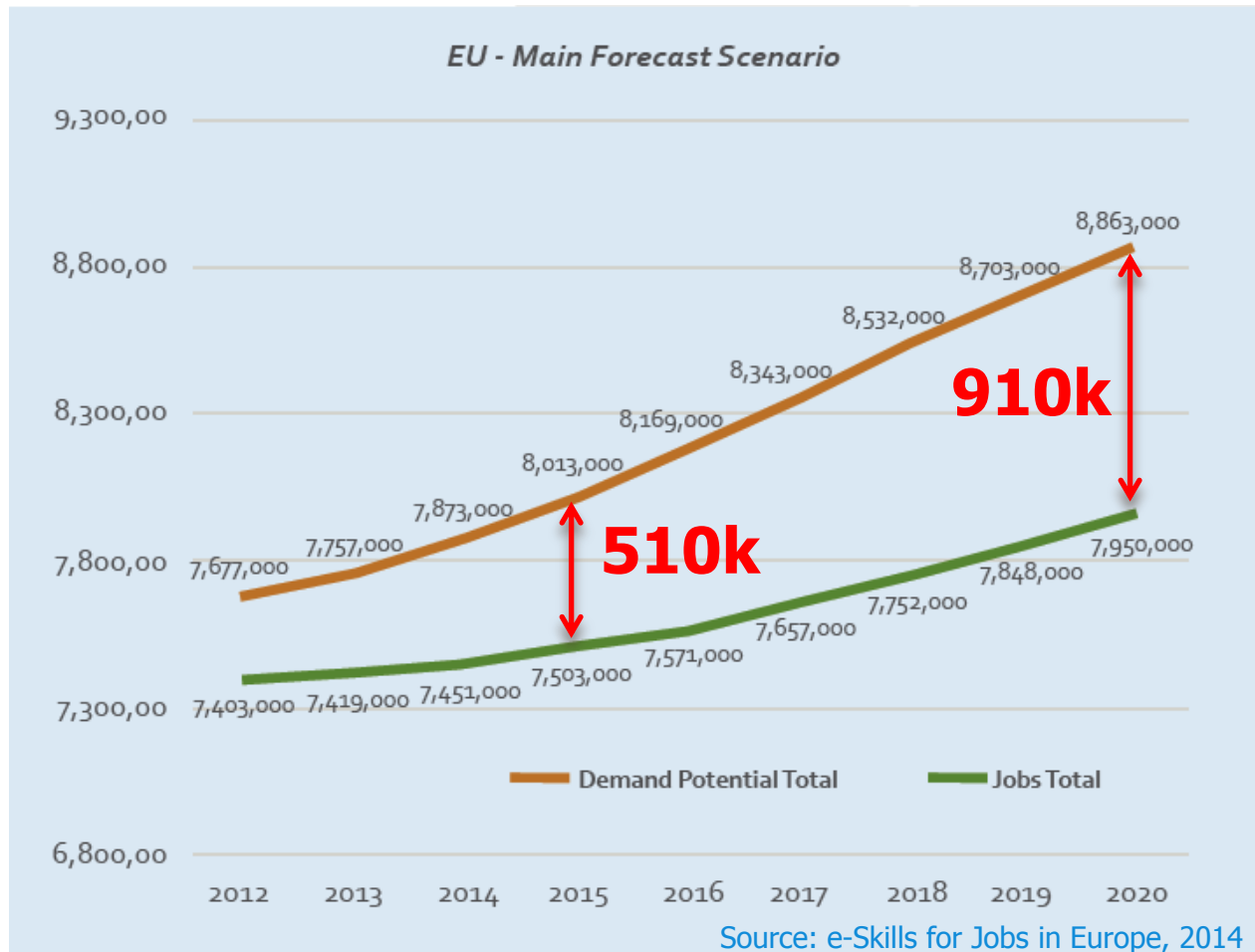
The main challenges for the Lecturer of the Future?

**Every student counts!
Every student is different!**

- New ambition of our faculty,
but cannot select students

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Let's Extrapolate to Europe: The Workforce Gap in ICT



Let's Extrapolate to Europe: The Workforce Gap in ICT

EU - Main Forecast Scenario

9,300,00

The main challenges for the Lecturer of the Future?

Every student counts!
Every student is different!



Source: e-Skills for Jobs in Europe, 2014

Let's Extrapolate to Europe: The Workforce Gap in ICT

EU - Main Forecast Scenario

9,300,00

The main challenges for the Lecturer of the Future?

Every student counts!
Every student is different!

Q: **Who** is the Lecturer of the Future?

7,300,00

Demand Potential Total

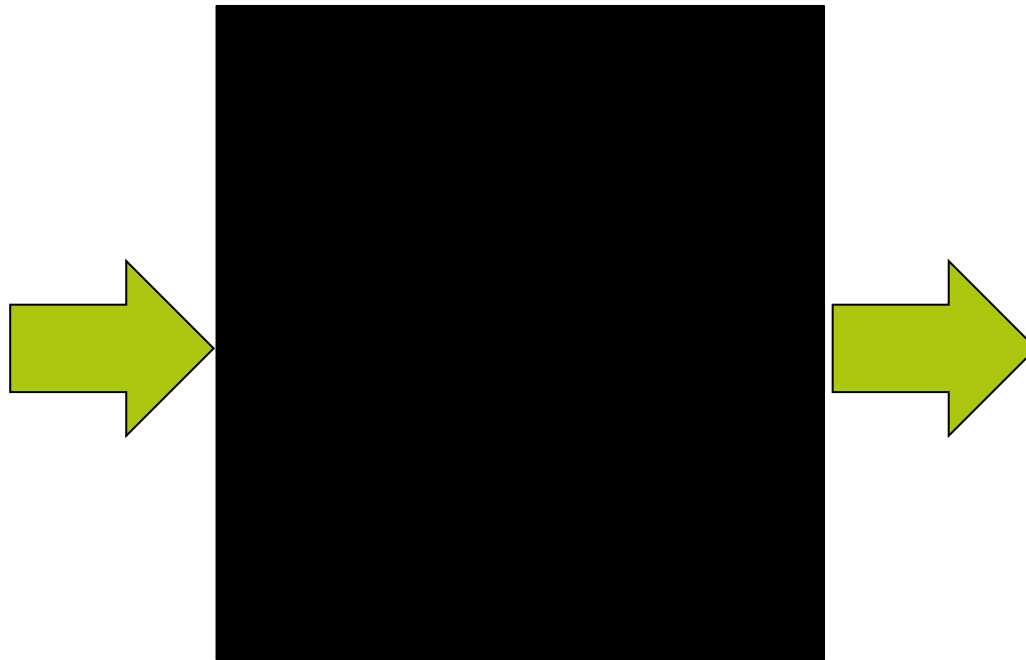
Jobs Total

6,800,00

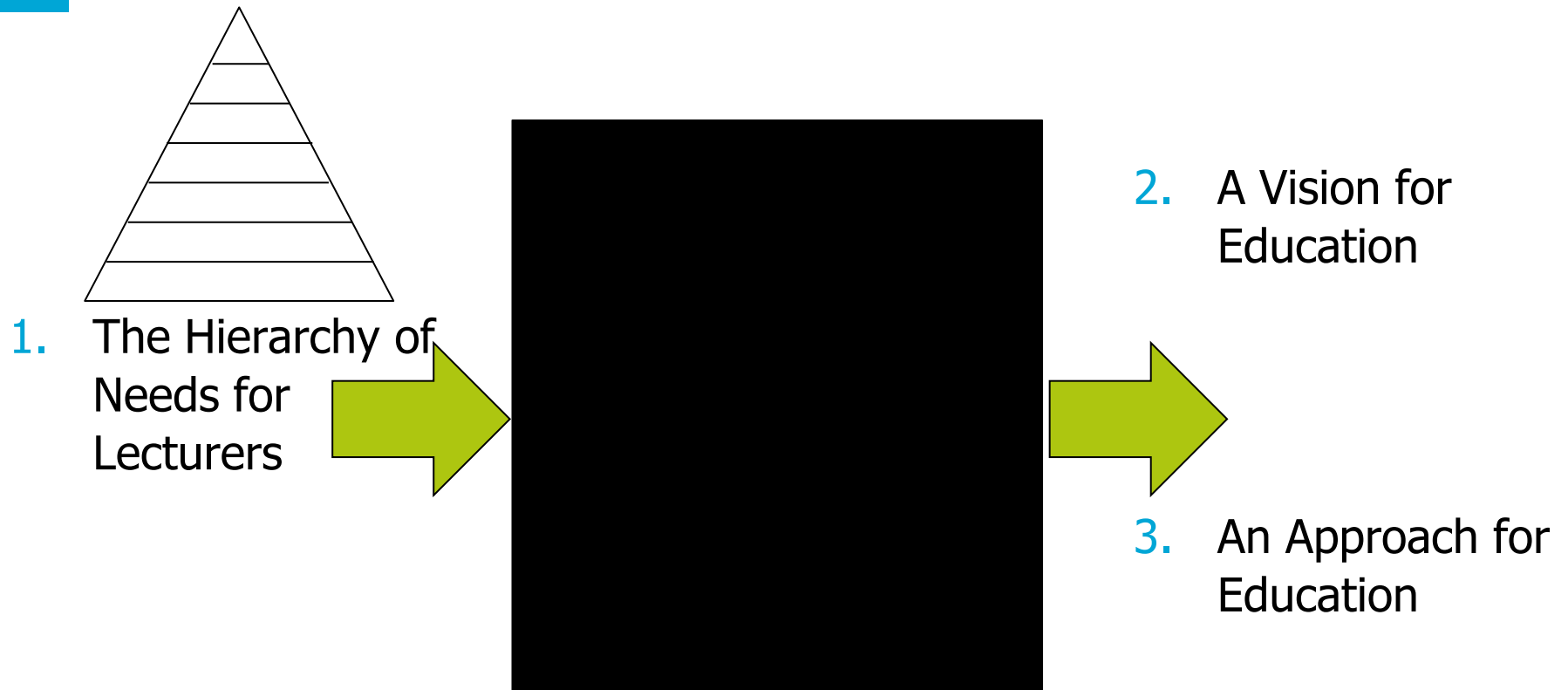
2012 2013 2014 2015 2016 2017 2018 2019 2020

Source: e-Skills for Jobs in Europe, 2014

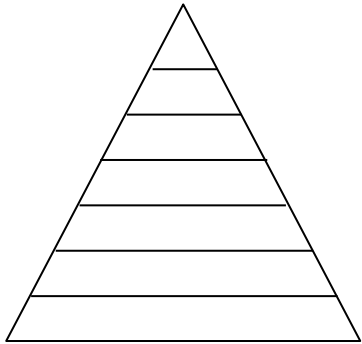
Who Is the Lecturer of the Future?



Who Is the Lecturer of the Future?



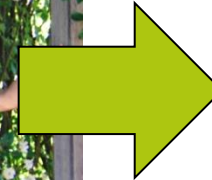
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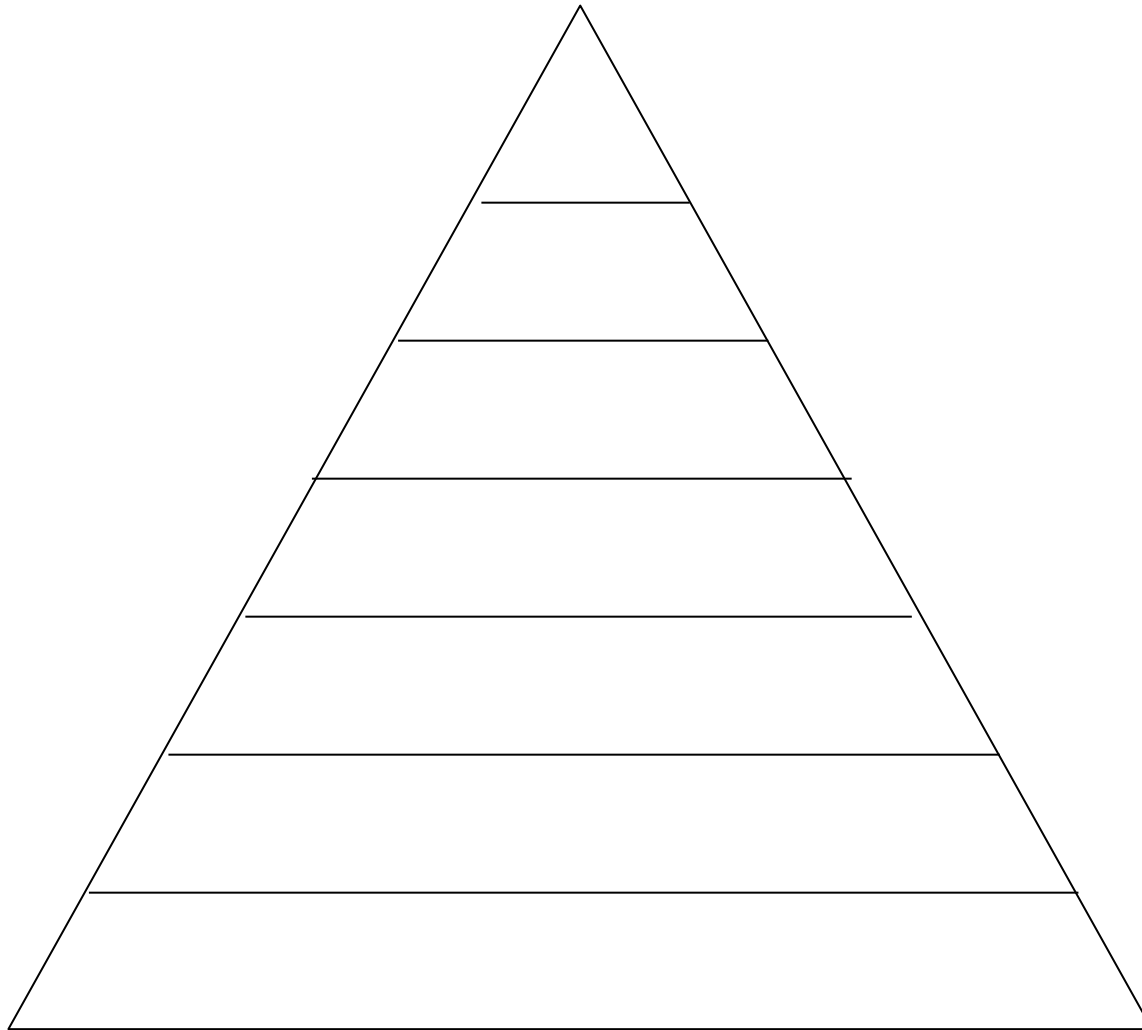
1. The Hierarchy of Needs for Lecturers



2. Every Student Counts!
A Vision for Education
3. Gamification:
An Approach for Education

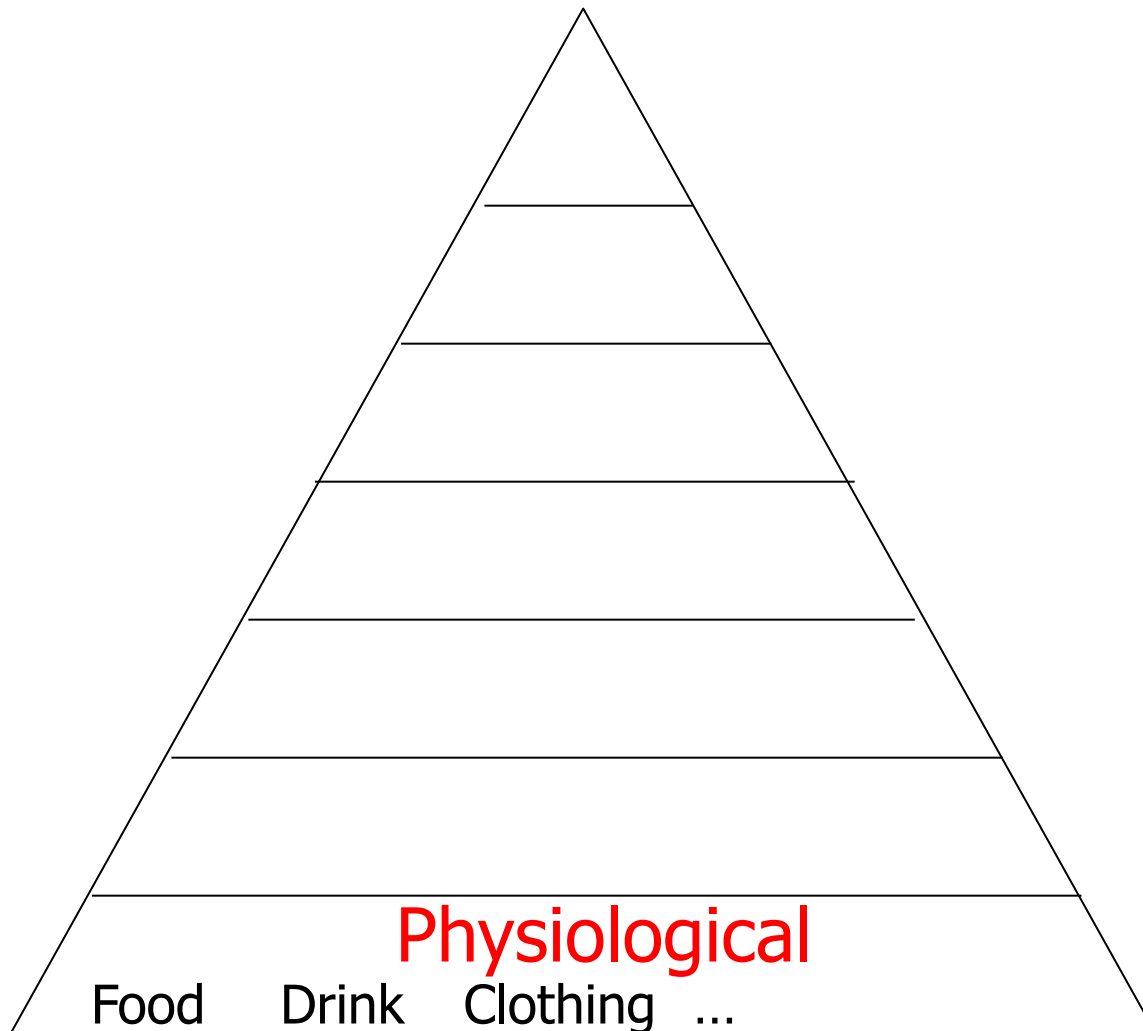


Maslow's Hierarchy of Needs (1943)



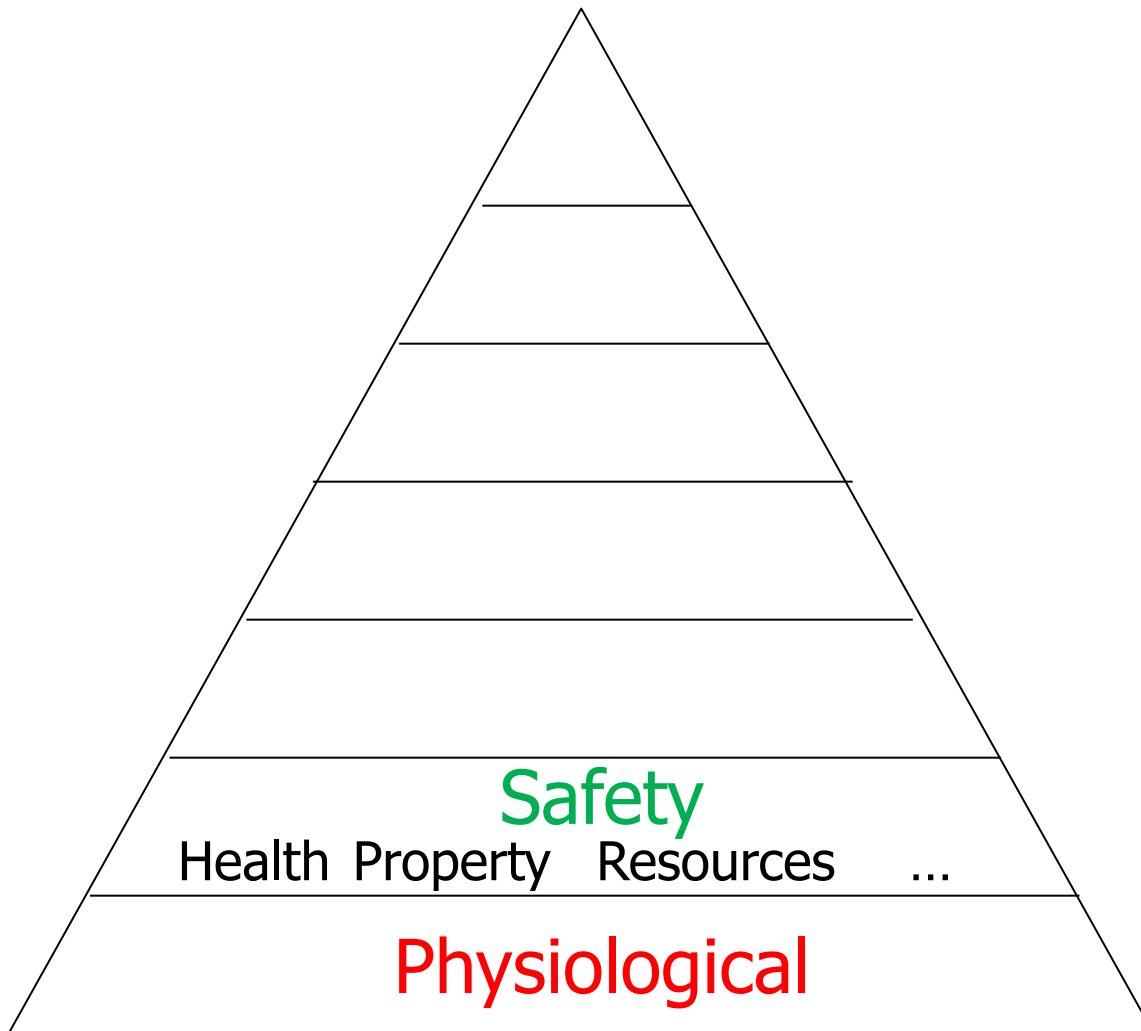
Abraham Maslow

Maslow's Hierarchy of Needs (1943)



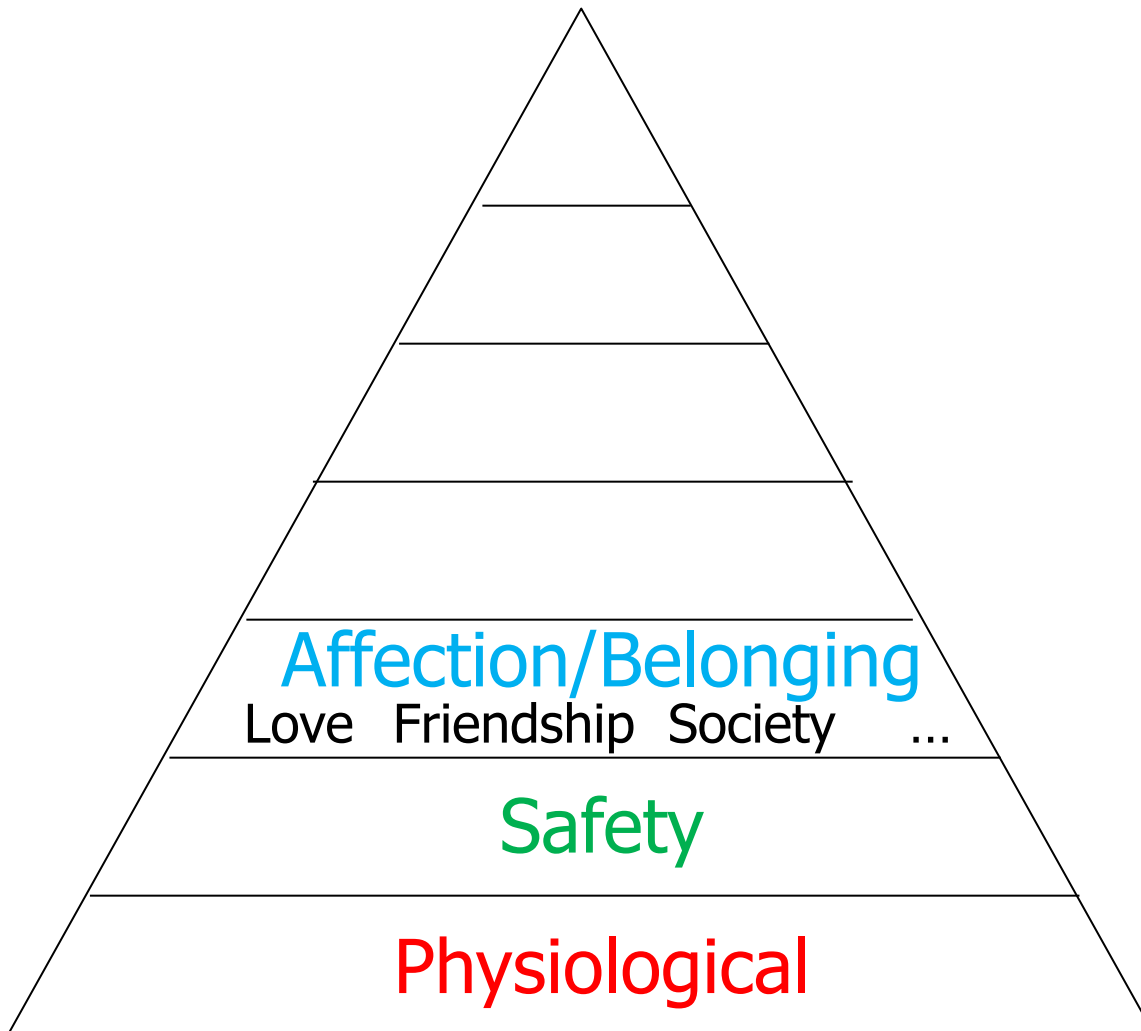
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Maslow's Hierarchy of Needs (1943)



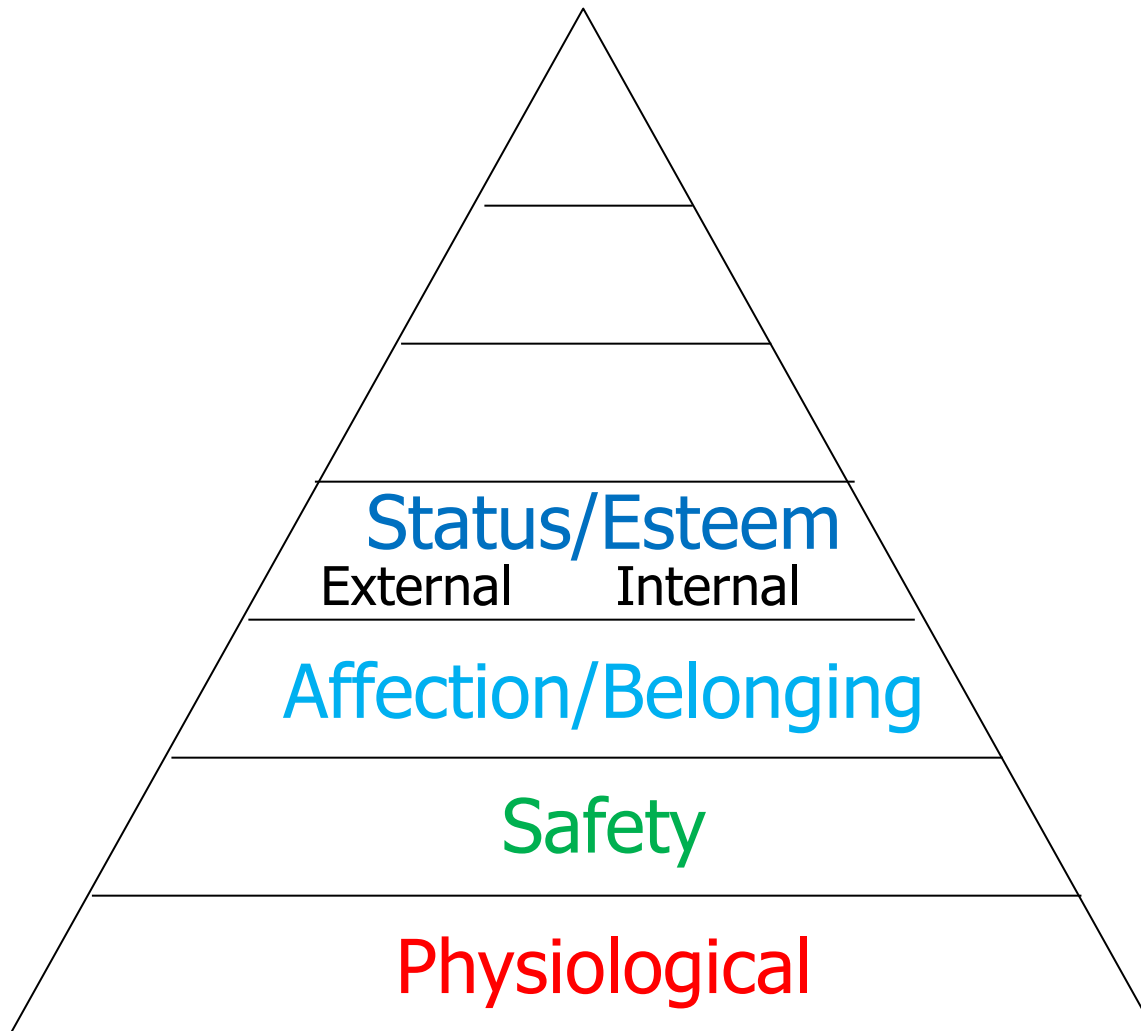
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Maslow's Hierarchy of Needs (1943)



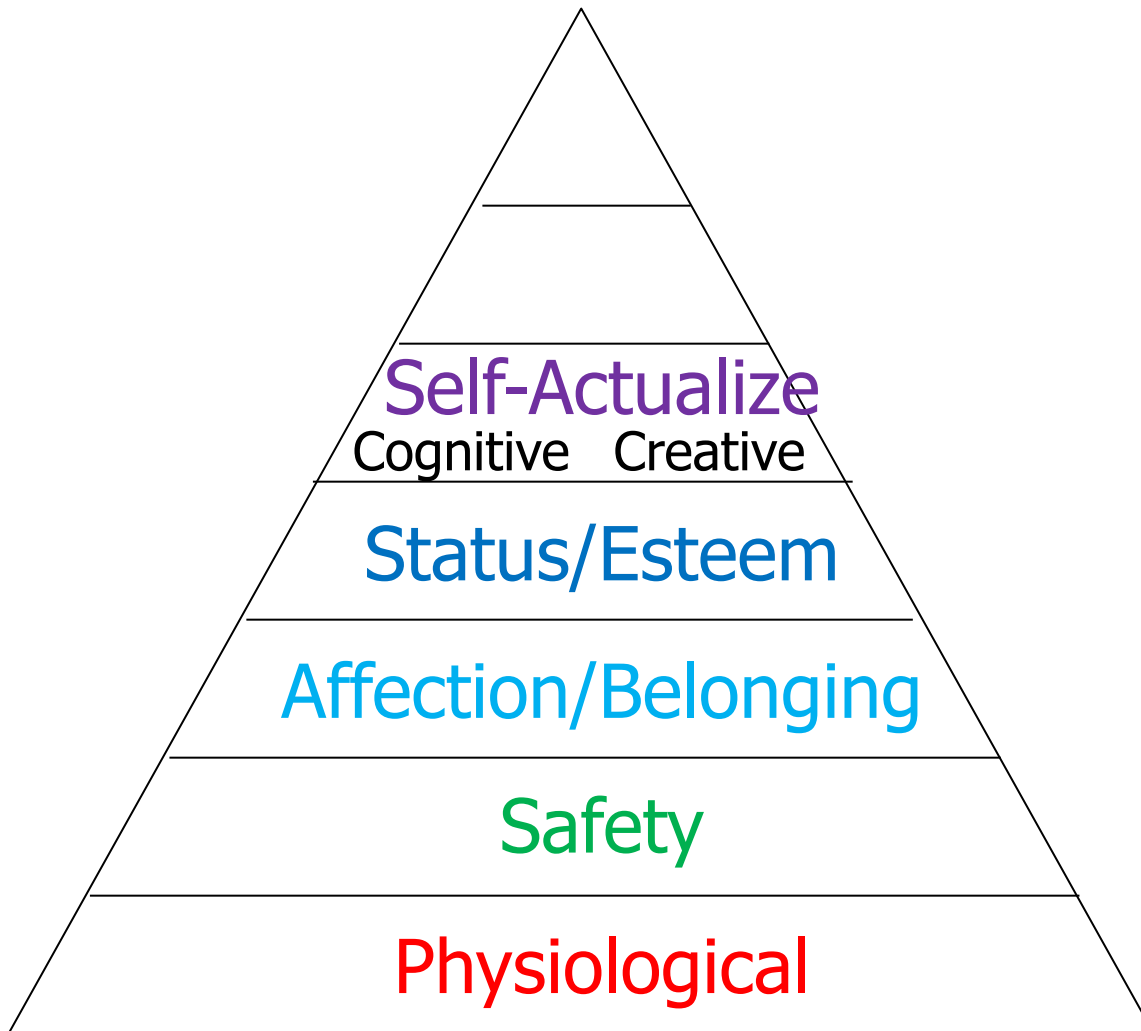
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Maslow's Hierarchy of Needs (1943)



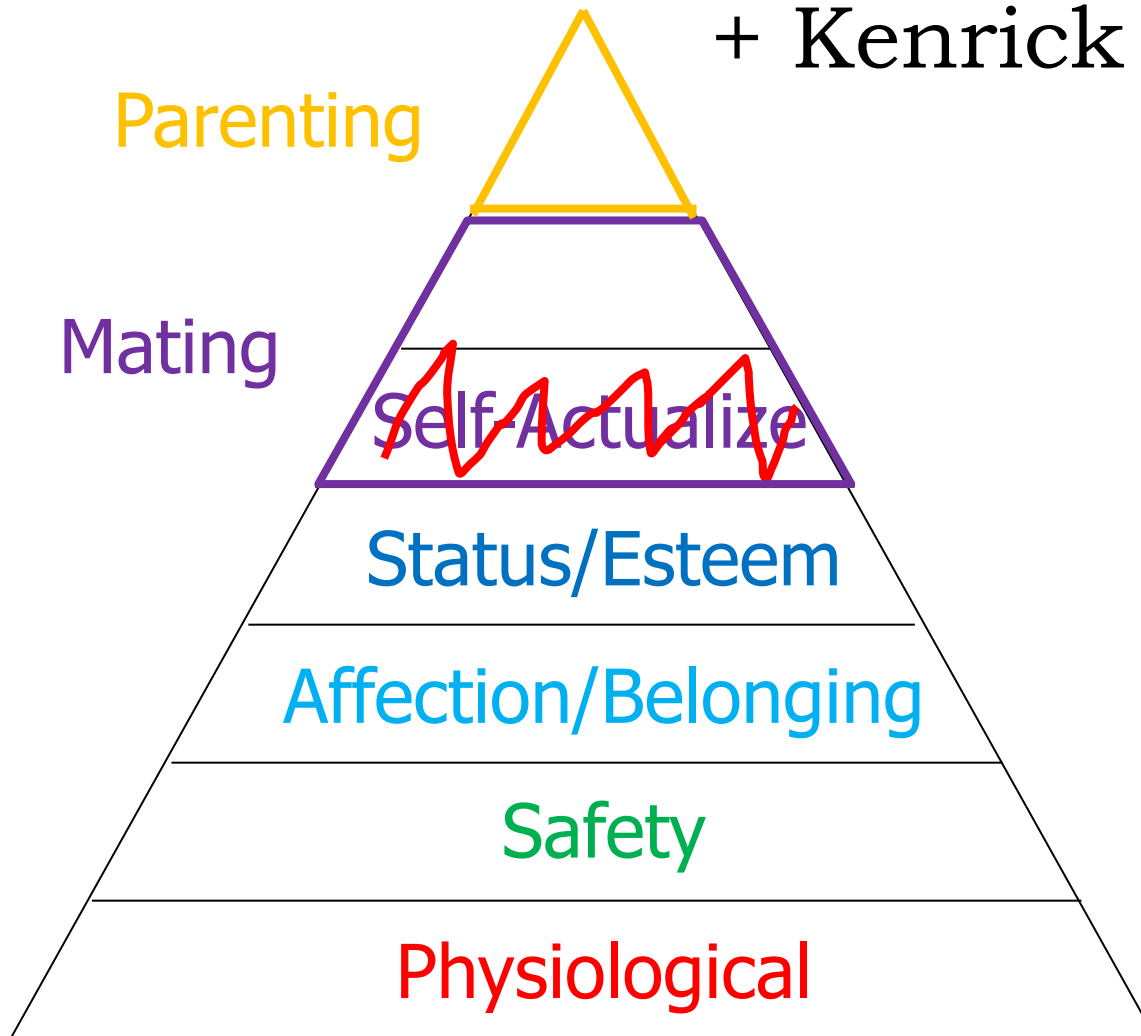
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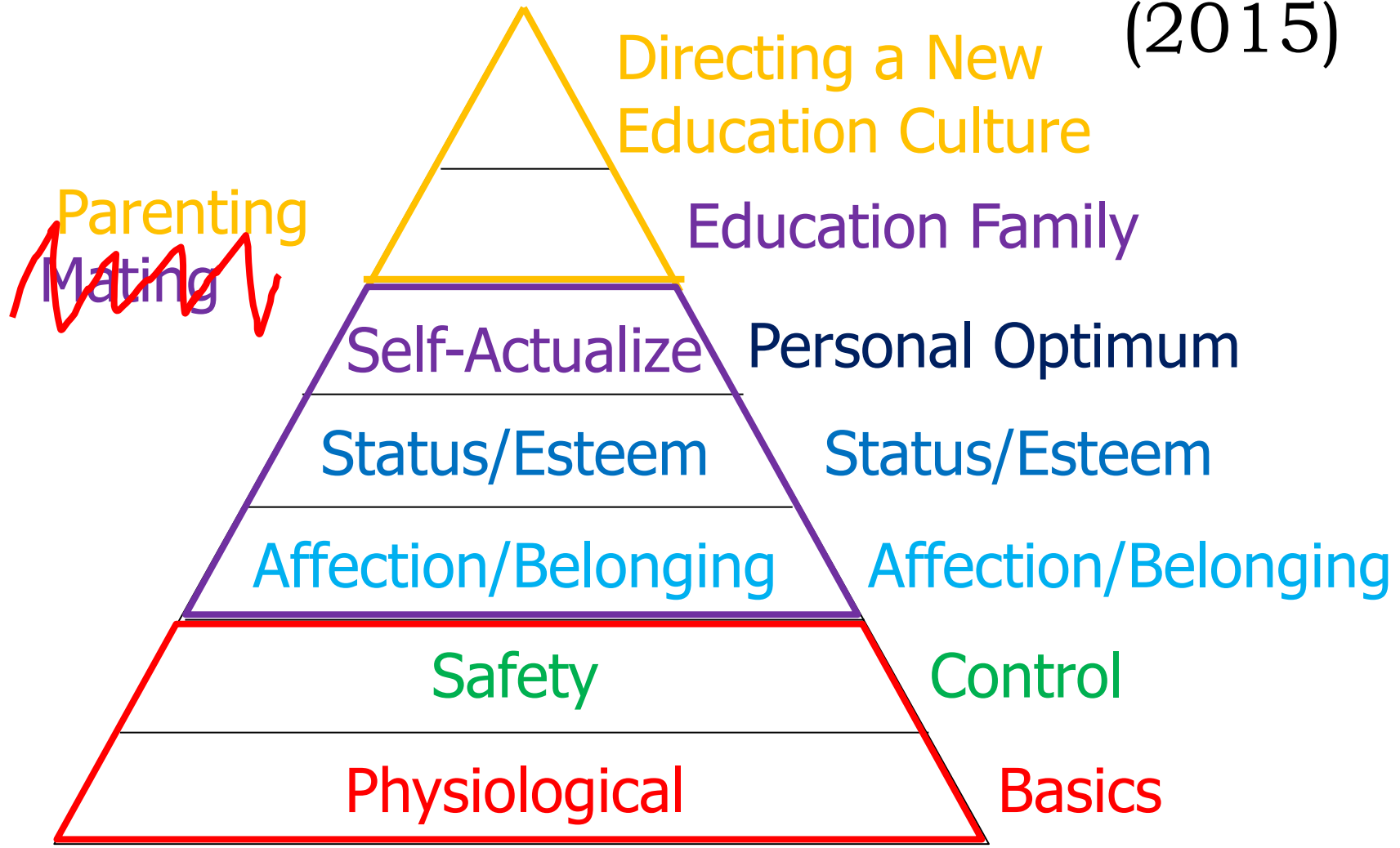
Abraham Maslow

Maslow's Hierarchy of Needs (1943) + Kenrick et al. (2010)

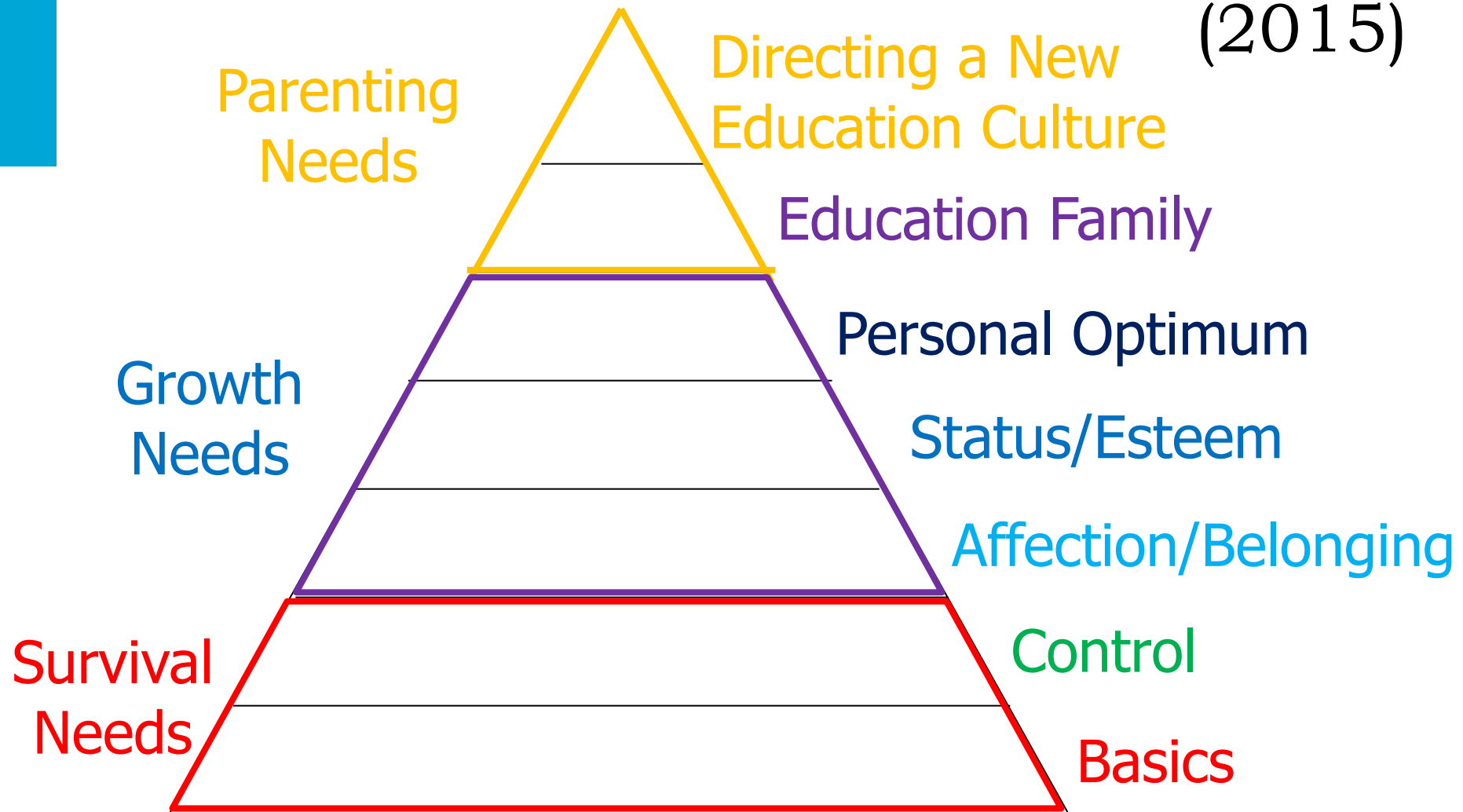


Abraham Maslow

The Hierarchy of Needs for Lecturers (2015)



The Hierarchy of Needs for Lecturers (2015)



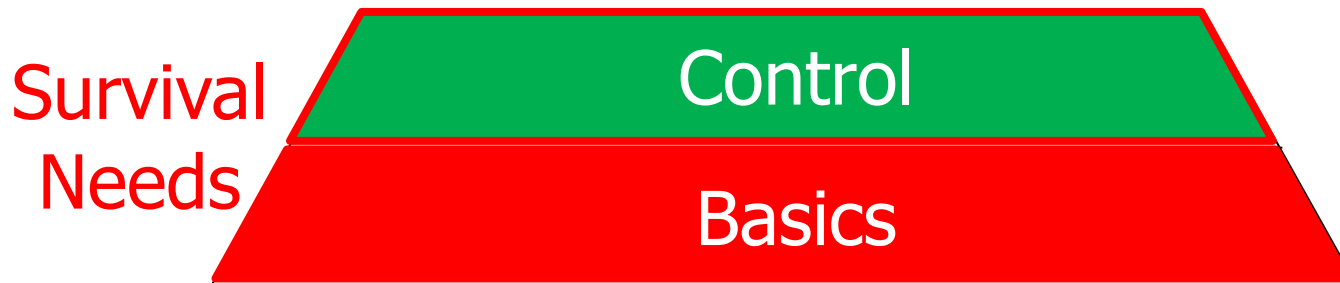
The Hierarchy of Needs for Lecturers (2015)

- We all know about these:
 - Describing course objectives
 - Designing course material, e.g., a lecture
 - Delivering course material, e.g., a lecture
 - Managing a classroom
 - ...
- Need to improve the BKO (we are its students)
- Need a “diurnal” cycle (sleep=research/...)
- Need much better content-authoring tools, especially for new conditions (MOOCs, blended, ...)



The Hierarchy of Needs for Lecturers (2015)

- Address threats, better chances of success:
 - Identifying threats to classroom success
 - Monitoring class status, e.g., “clickers”
 - Computing trade-offs risk-benefit
 - ...
- Need to have simple, online learning analytics (Excel?!)
- Need modern testing tools
- Need better guidelines to balance w non-teaching tasks



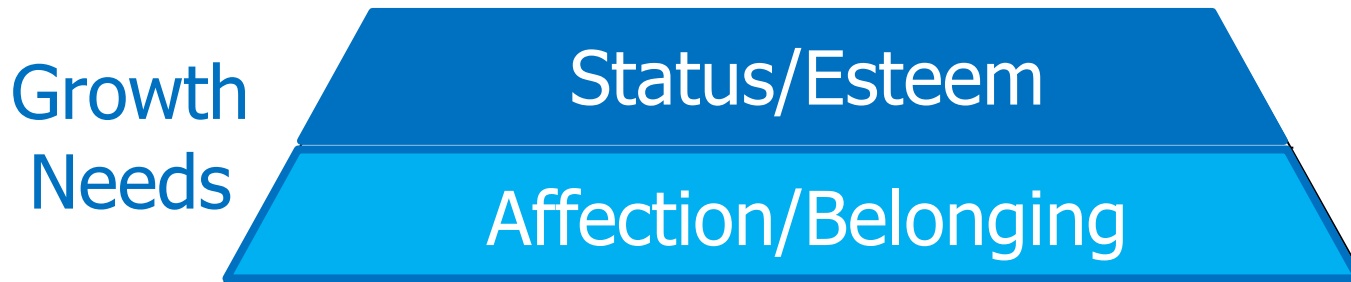
The Hierarchy of Needs for Lecturers (2015)

- Social needs:
 - Social improvement groups, e.g., local (B)KO groups, co-teaching and pair teaching,
 - Professional associations, e.g., SIGCSE
 - Participating in and learning from conferences in the field,
 - ...
- Need tools for management of course teams (maybe Blackboard is too slow, Facebook breaks privacy laws)
- Need sharing of best-practices and even checklists
- Need a culture of “sharing is caring”



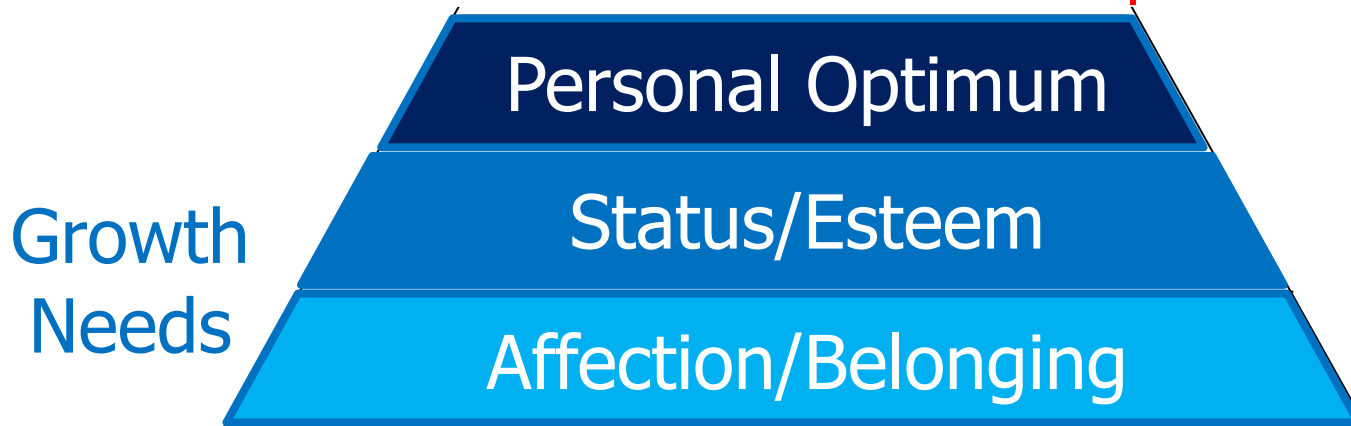
The Hierarchy of Needs for Lecturers (2015)

- Internal feeling of mastery, so self-esteem:
 - Achievement and mastery of a course or education concept
- External status:
 - Status, including course completion and course results
 - Recognition, through student surveys, manager evaluations, TYs
 - Glory, through awards, publishing in top venues in the field
 - ...
- Need to have recognize value of education (vs. research)
- Need unified scoring system for education (use #ECTS?)
- Need detailed learning analytics



The Hierarchy of Needs for Lecturers (2015)

- Cognitive:
 - Learning new education techniques: gamification, MOOC, blended
 - Besting own previous desires
- Creative:
 - Creating new education techniques
- Need to formulate+validate personal vision of education
- Need ability to create+validate new education techniques
- Need "20% own time" to develop own optimum (Google!)



The Hierarchy of Needs for Lecturers

(2015)

- When your students become professors:
 - Teach the teachers!
 - ...
- Need tracking tools for this, a la The Mathematics Genealogy Project
- Need tools to advise and collaborate with friendly teams
- Need detailed learning analytics for friendly teams
- Need institutional support, resources, recognition
- Want to join the Gamification Masterclass '15?

Let me know!

Parenting
Needs



Education Family

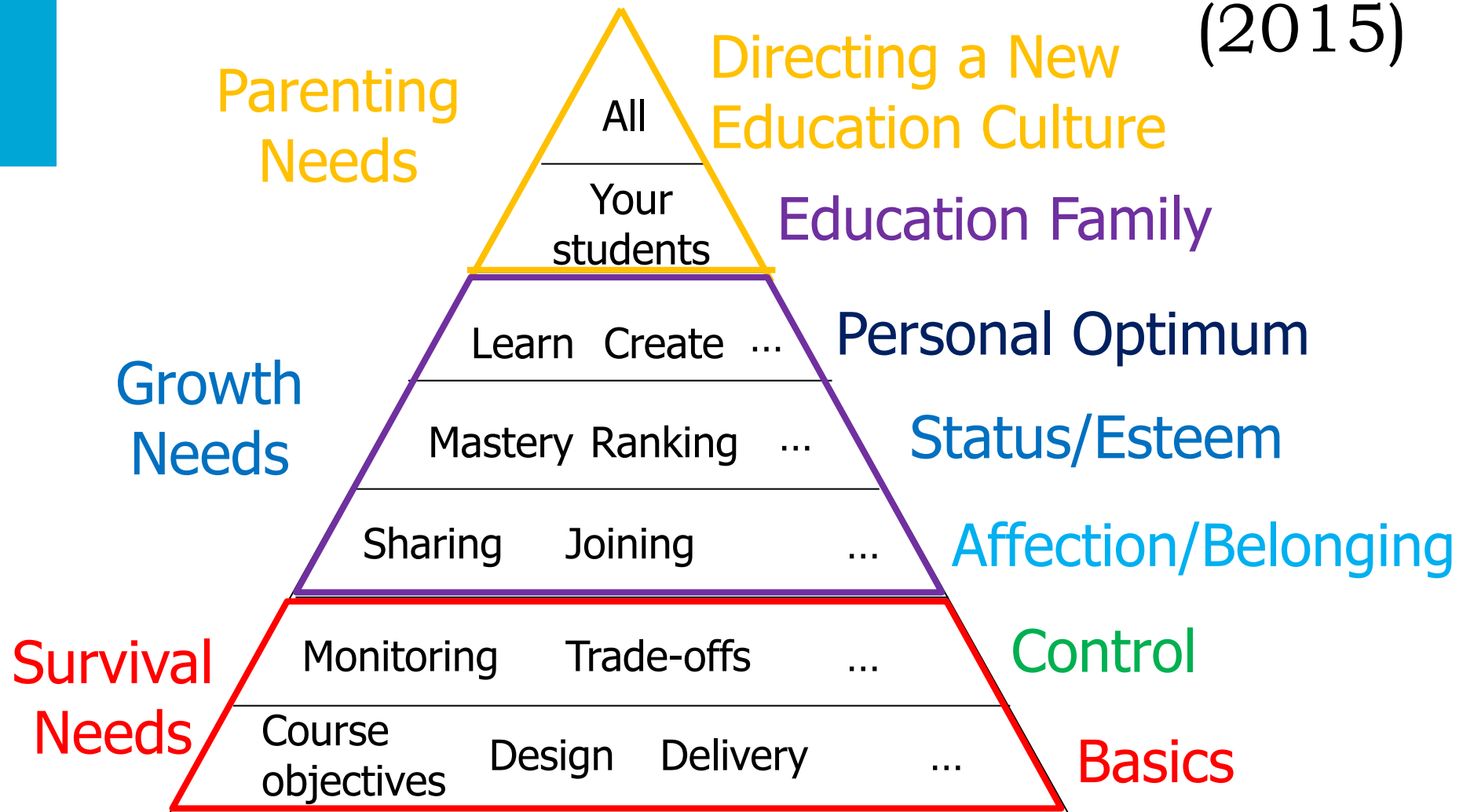
The Hierarchy of Needs for Lecturers

(2015)

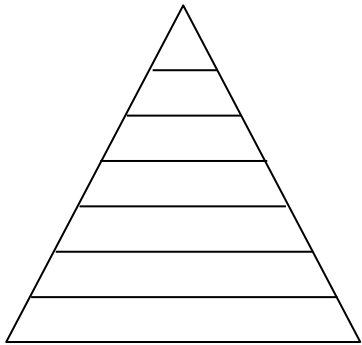
- Guide and direct the creation of a new education culture:
 - Share with the world your education work
 - Influence through various channels, including the textbook
 - ...
- Need institutional support, resources, recognition
- Need standardization of education demands
- Need tools to materialize vision at large scale



The Hierarchy of Needs for Lecturers (2015)



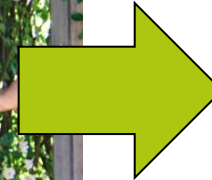
Who Is the Lecturer of the Future?



1. The Hierarchy of Needs for Lecturers



2. **Every Student Counts!**
A Vision for Education



3. Gamification:
An Approach for Education

Every Student Counts! (my vision)

1. Enable “smart stuff”, both individually and in teams.
2. Achieve all learning objectives, including learning the process.
3. Activate all students to deepen vital skills, for a lifetime.
4. Educate great professionals, but also great citizens: to shoulder the society, to educate others, to be responsible and ethical.
5. Develop, validate, and share the education techniques that enable points 1—4 in *your* environment.

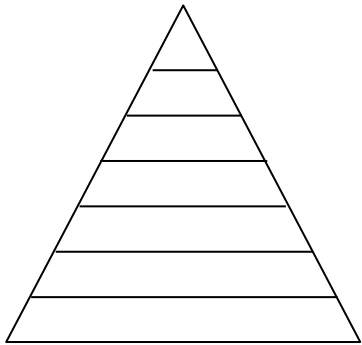
Exercise: The Critical Thinking Game – What is “smart stuff”?

- Team work, first 2 minutes
 1. Think about own experience
 2. Convince your team before proposing an answer
- Open discussion, next 2 minutes
 - Tell everyone the answer

Q: What would be for you “smart stuff”?

Voting on best answer

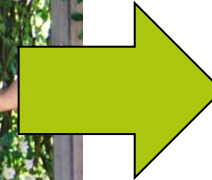
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3. **Gamification:**
An Approach for Education

2014: How to spend 1 Billion?

A: ICT and **Gamification** for education!



Q: What is **gamification**?

A: The use of techniques designed for gaming in non-gaming settings, e.g., in education.

2014: How to spend 1 Billion?

A: ICT and Gamification for education!



Q: But, Alexandru, surely not every course can use gamification!? I mean, there is no technique for my concept / activity / entire course...

A: Wonderful Advances in Gaming, Last 10 Years: diverse **individual** challenges

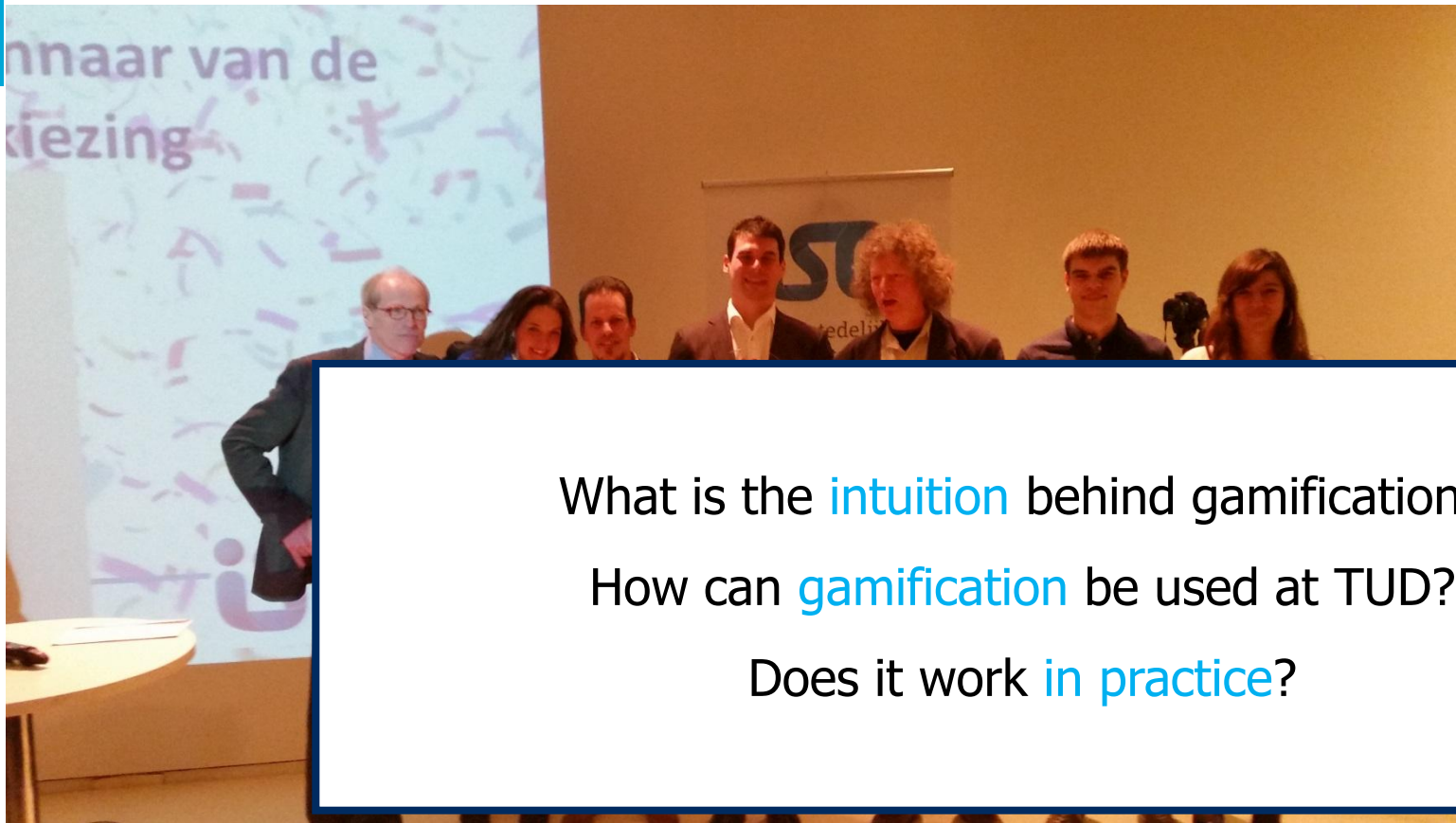


A: Wonderful Advances in Gaming, Last 10 Years: diverse **social** challenges



2014: How to spend 1 Billion?

A: ICT and Gamification for education!



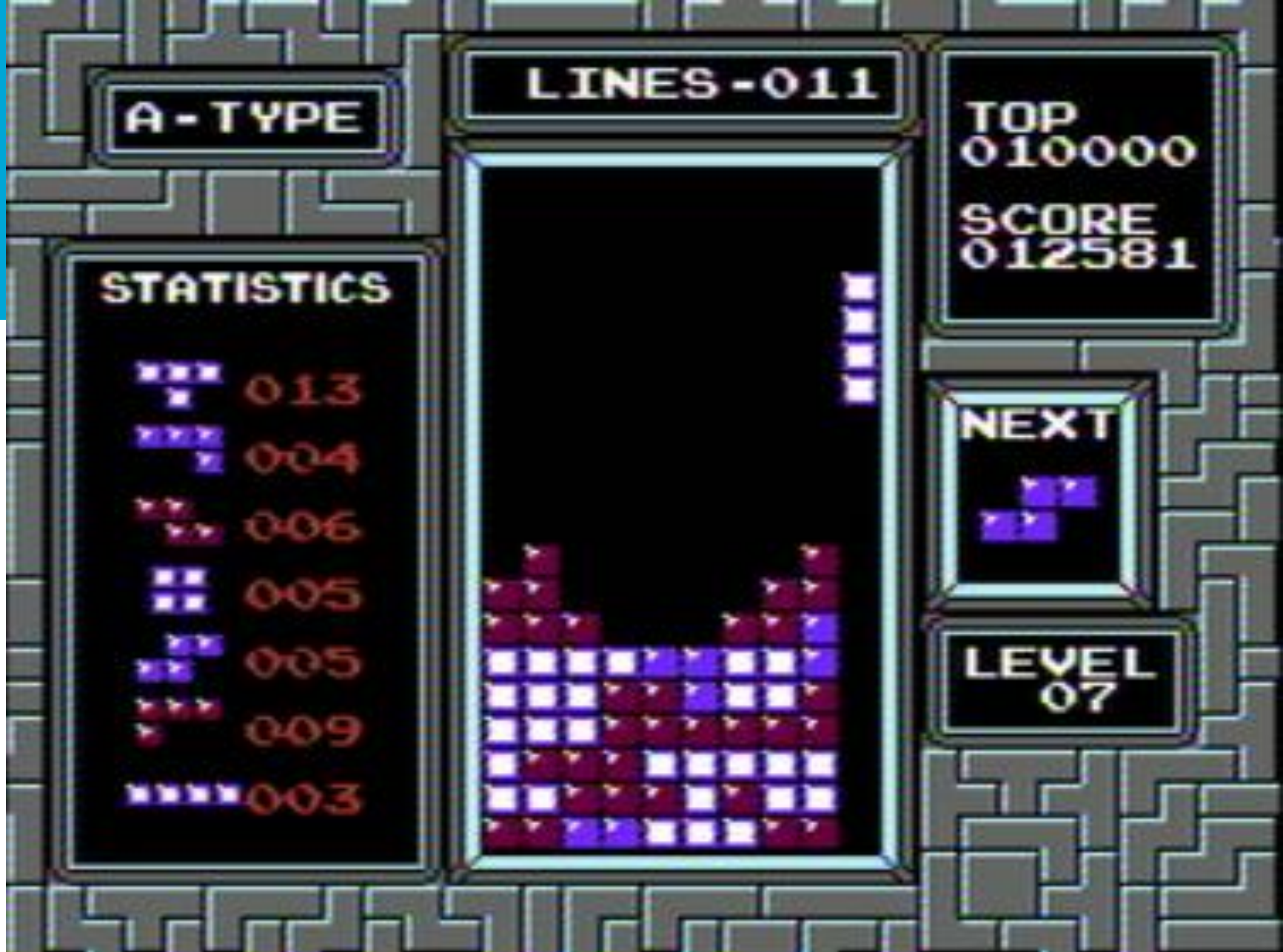
What is the **intuition** behind gamification?

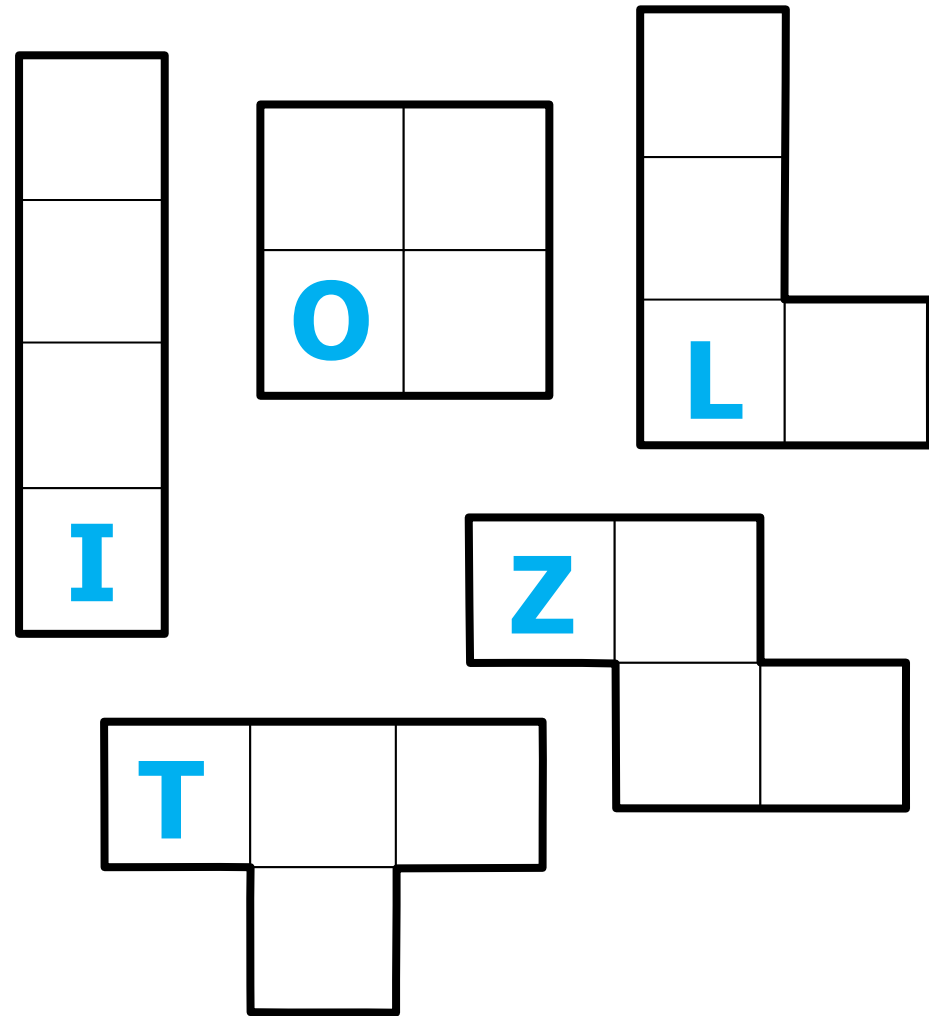
How can **gamification** be used at TUD?

Does it work **in practice**?

Do You Know This Person?

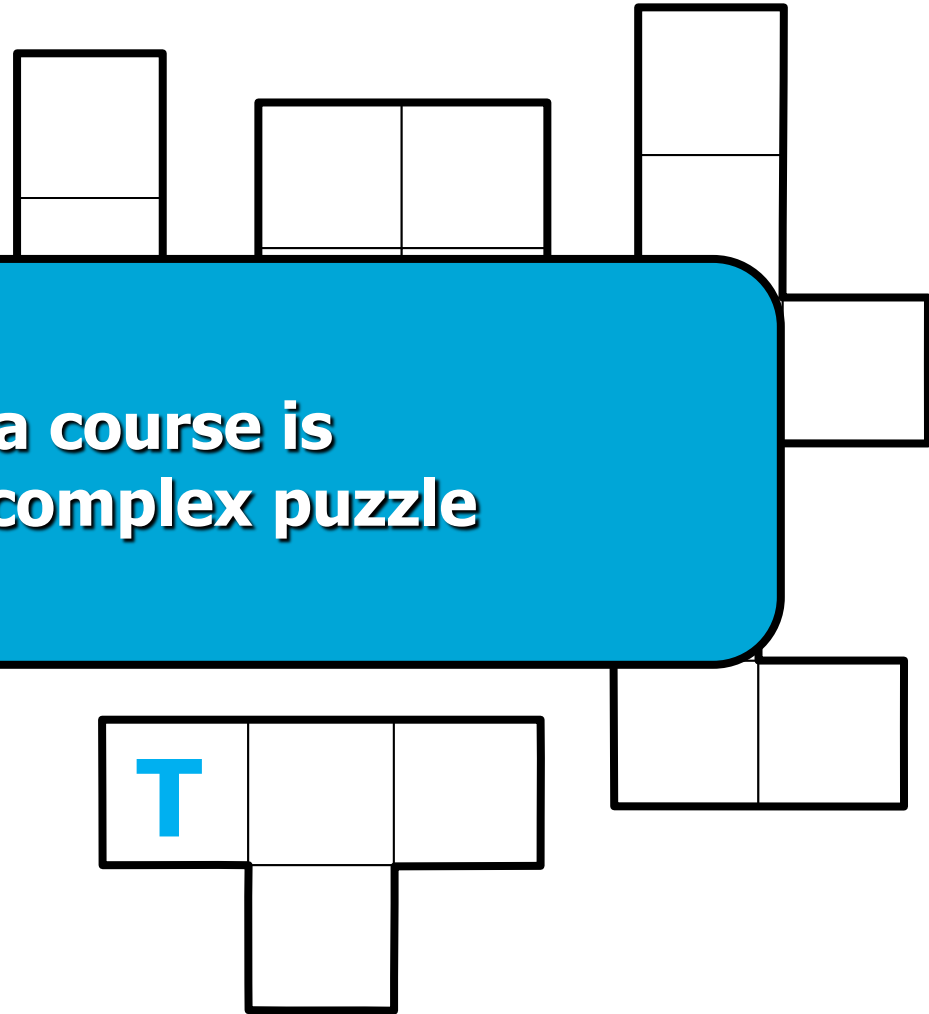
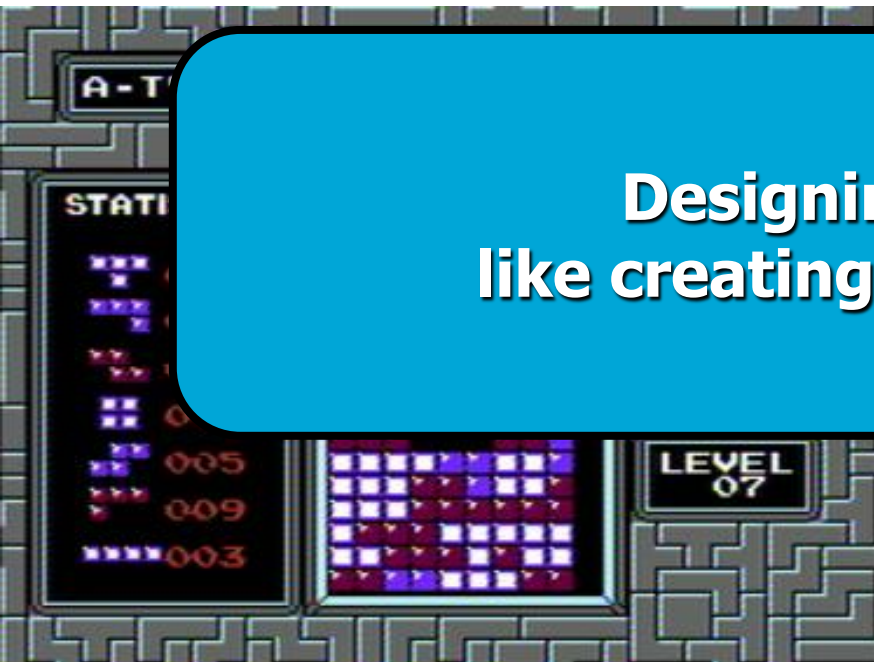




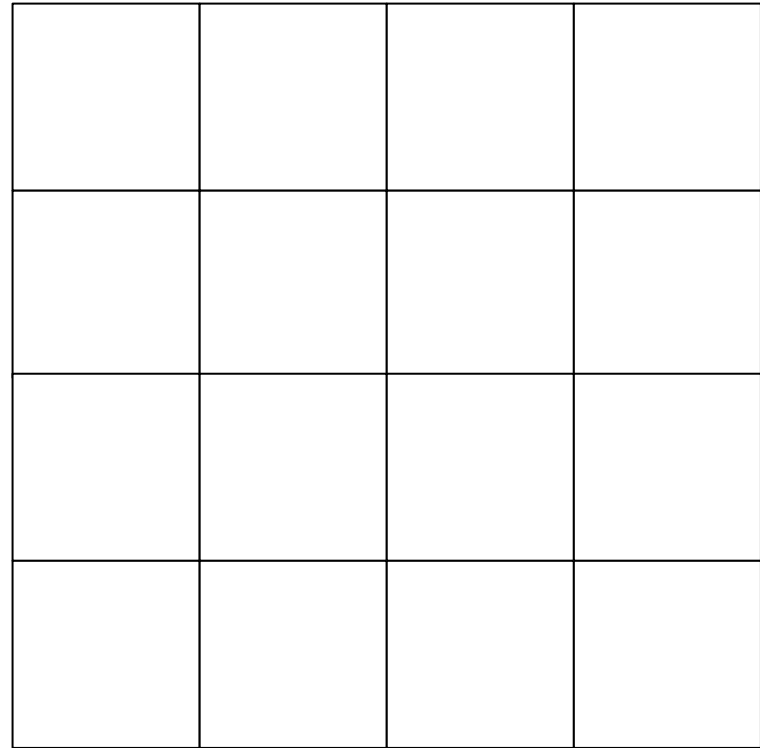
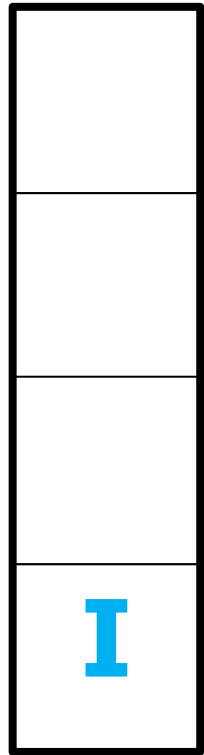




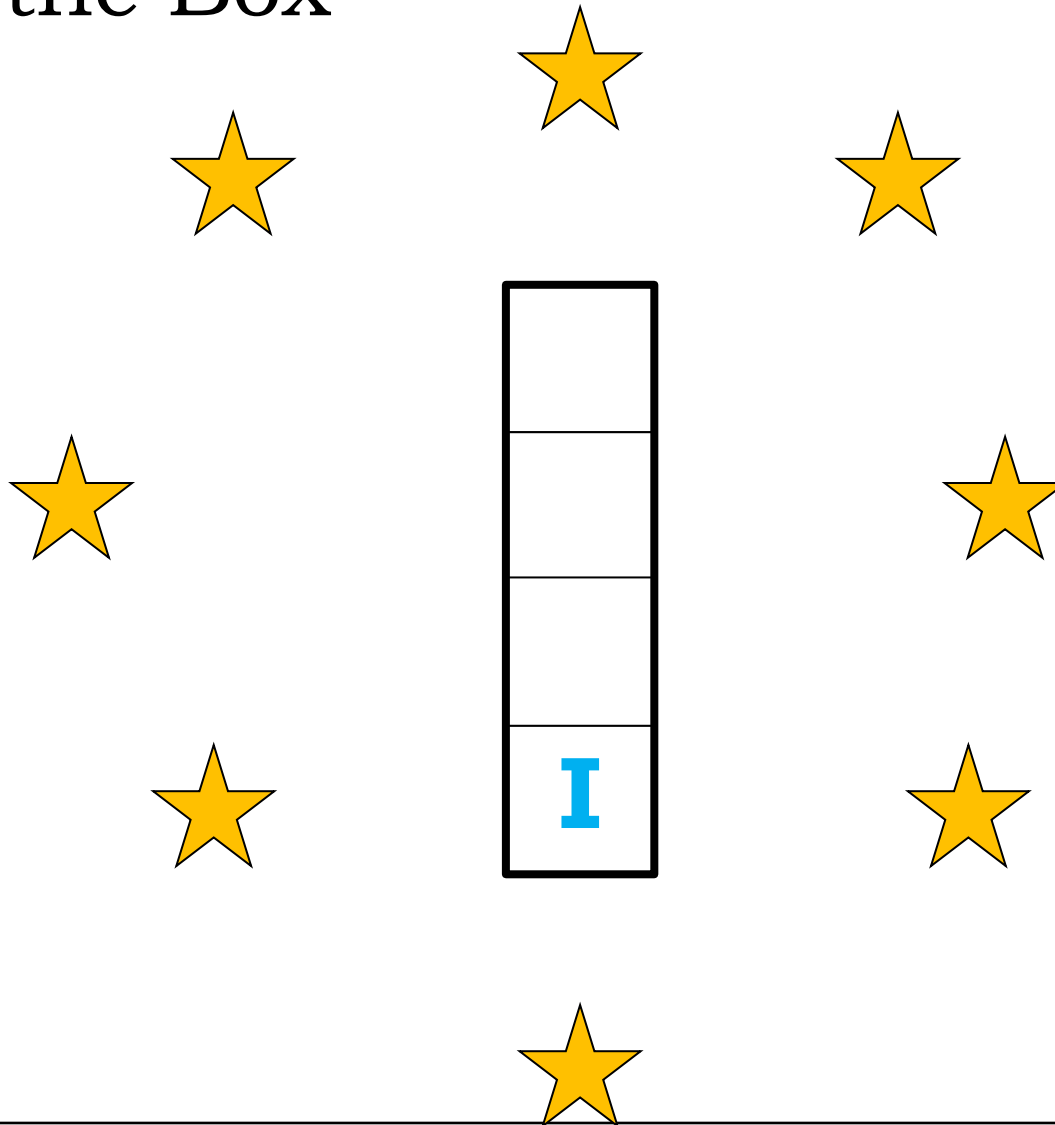
**Designing a course is
like creating a complex puzzle**



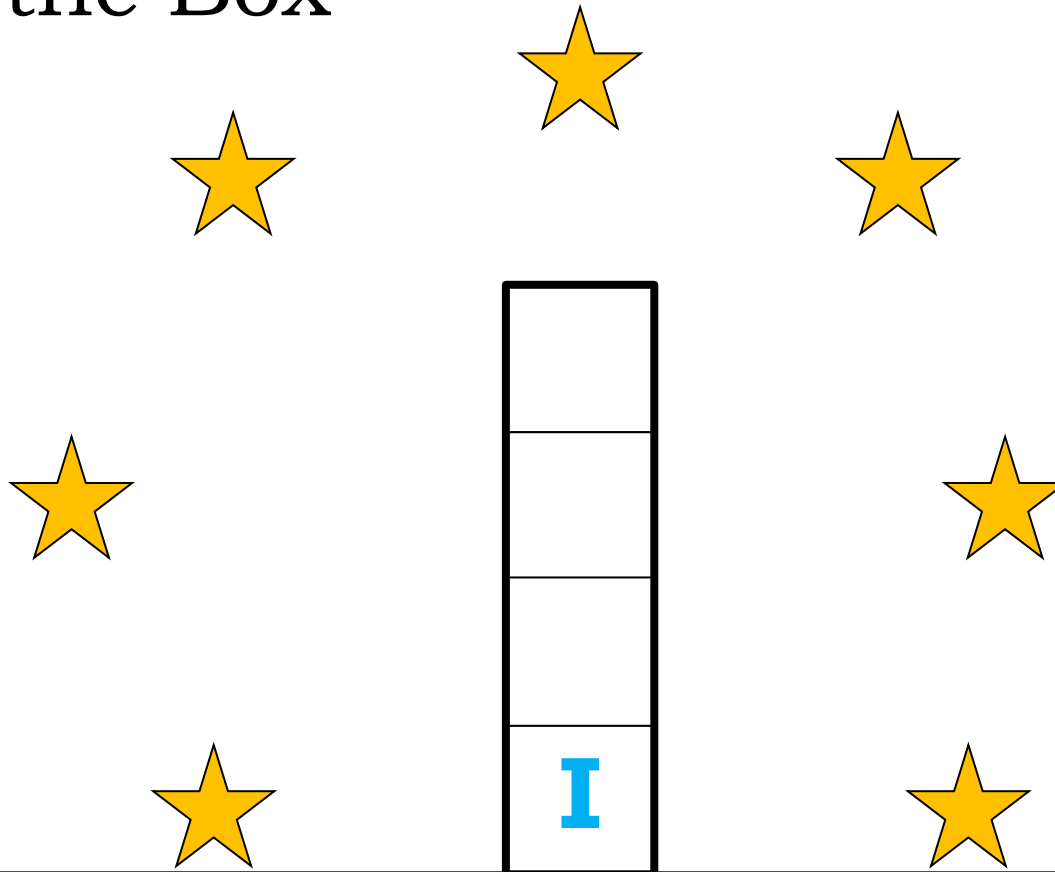
I in the Box



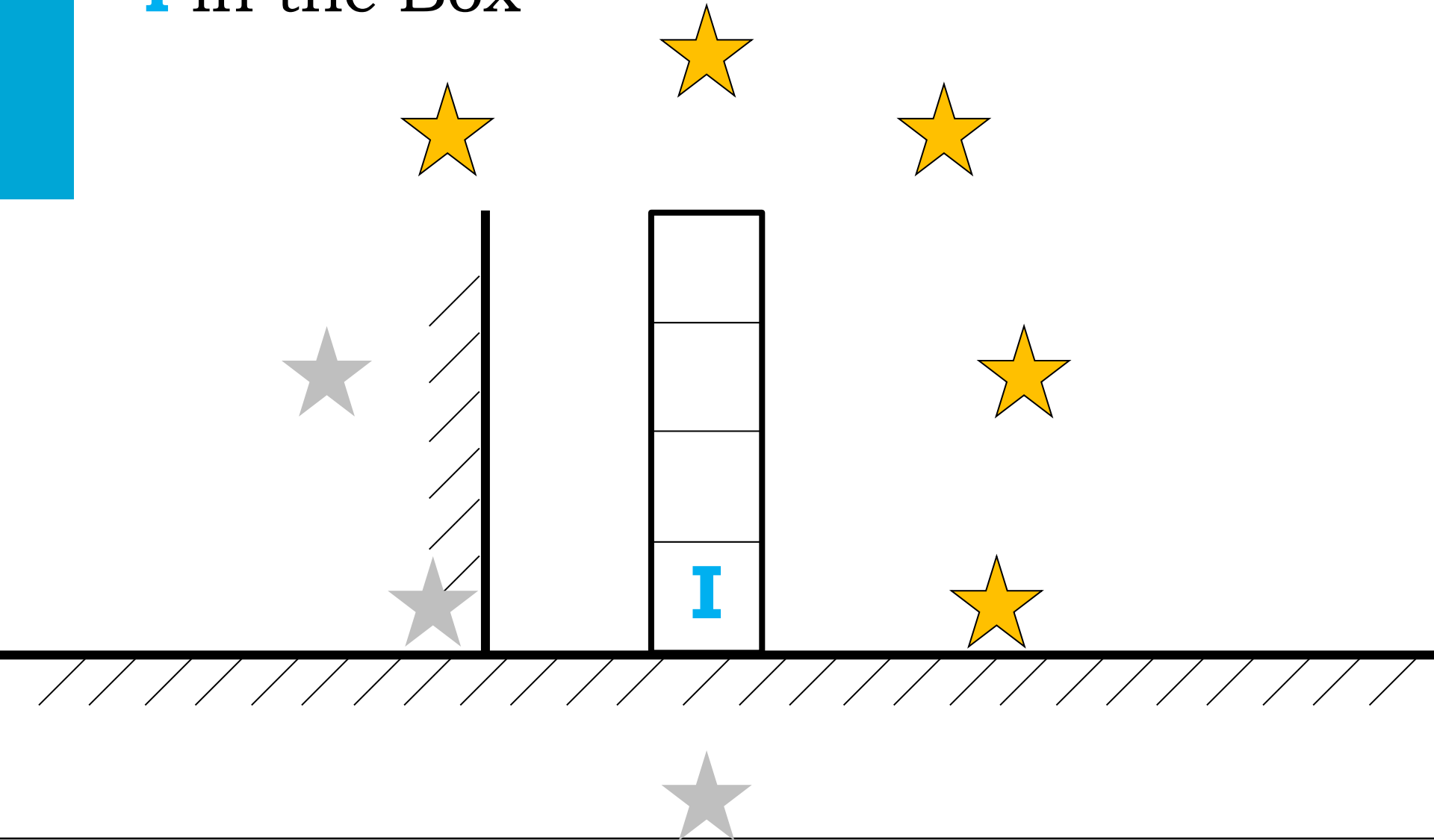
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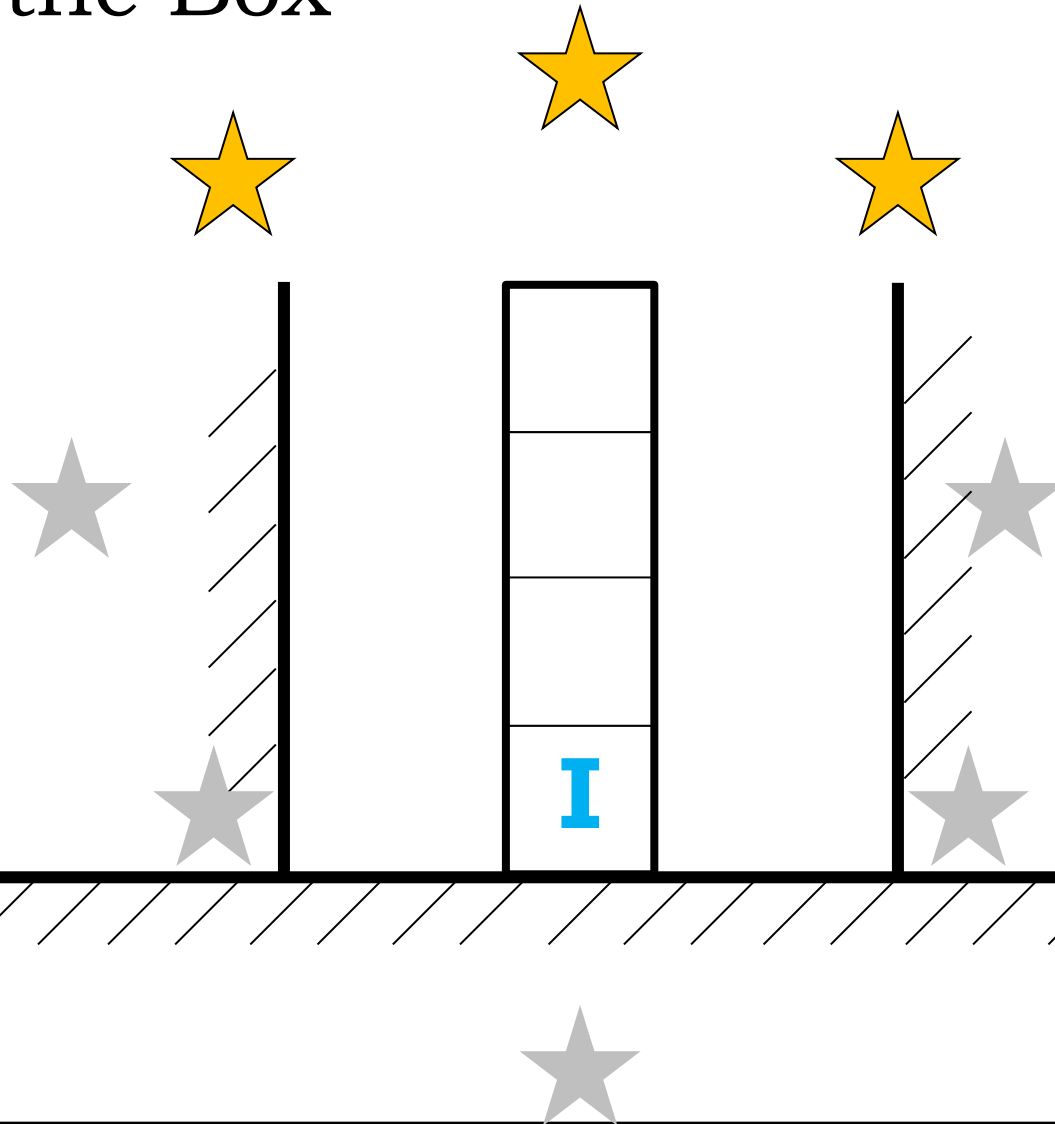
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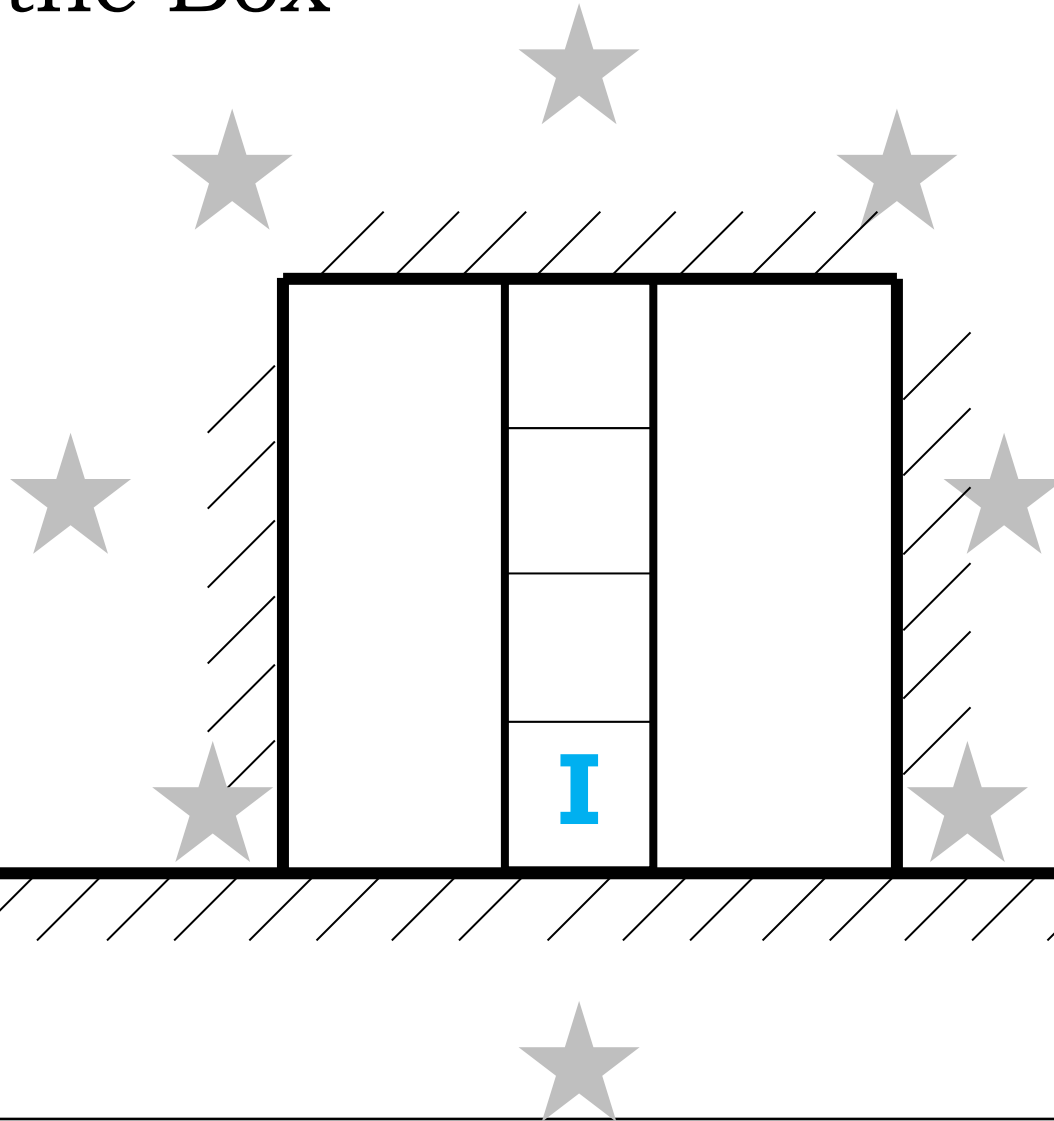
I in the Box

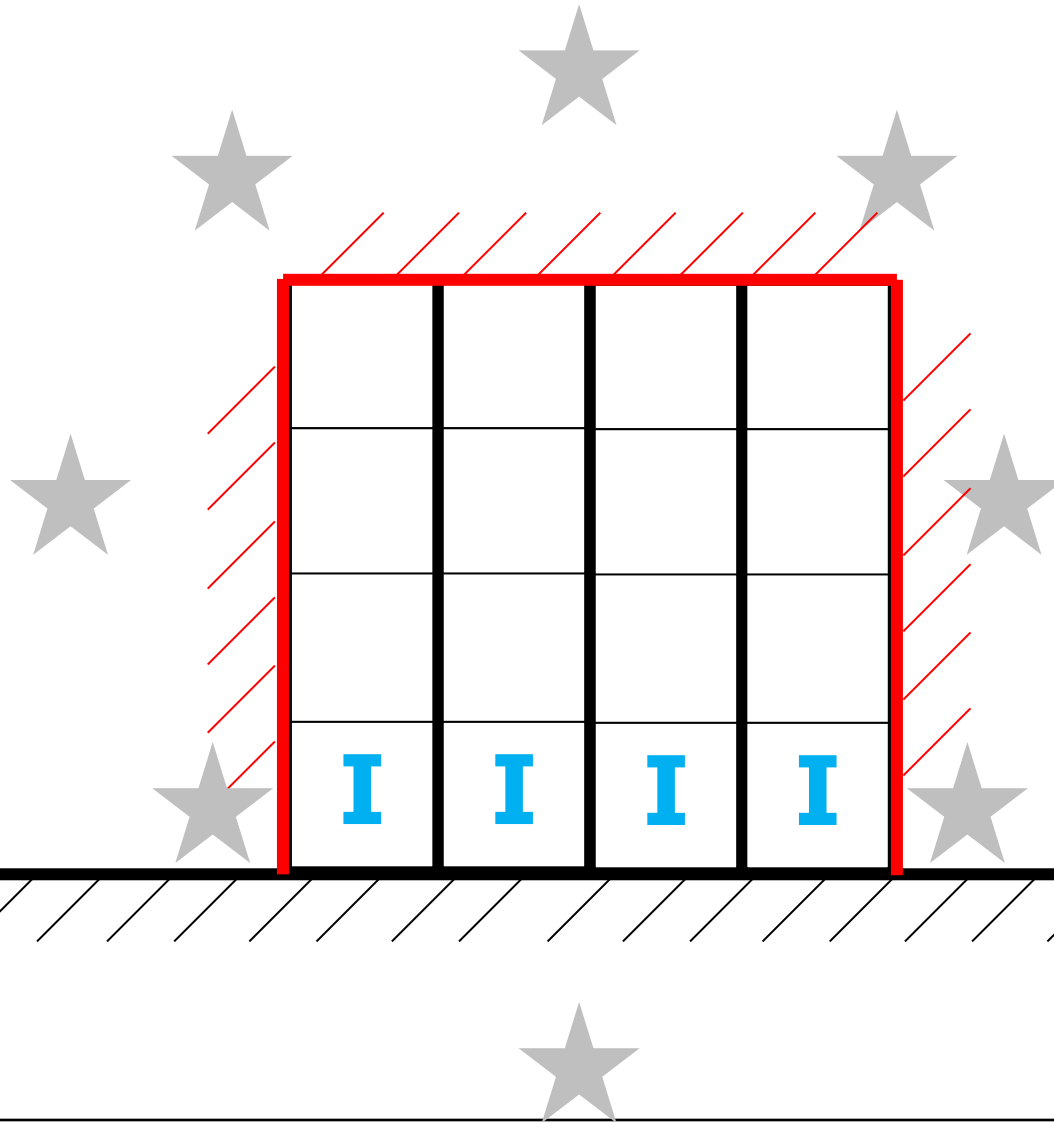


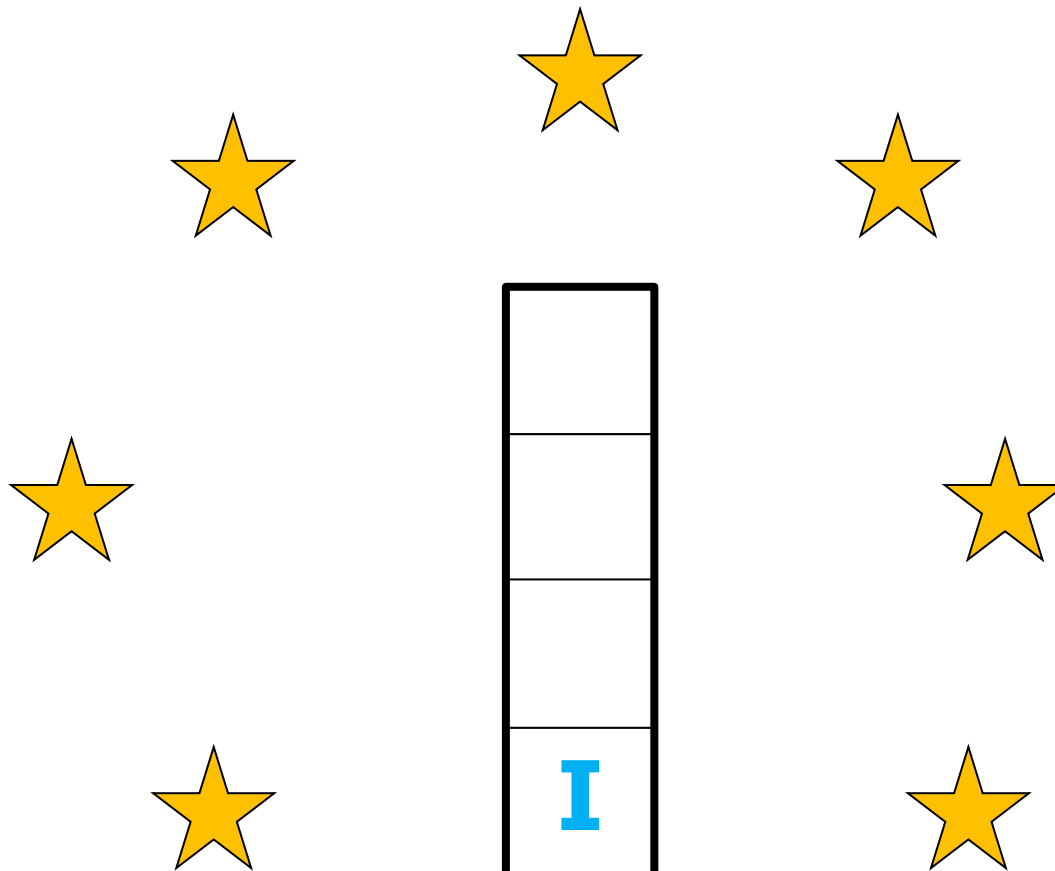
I in the Box



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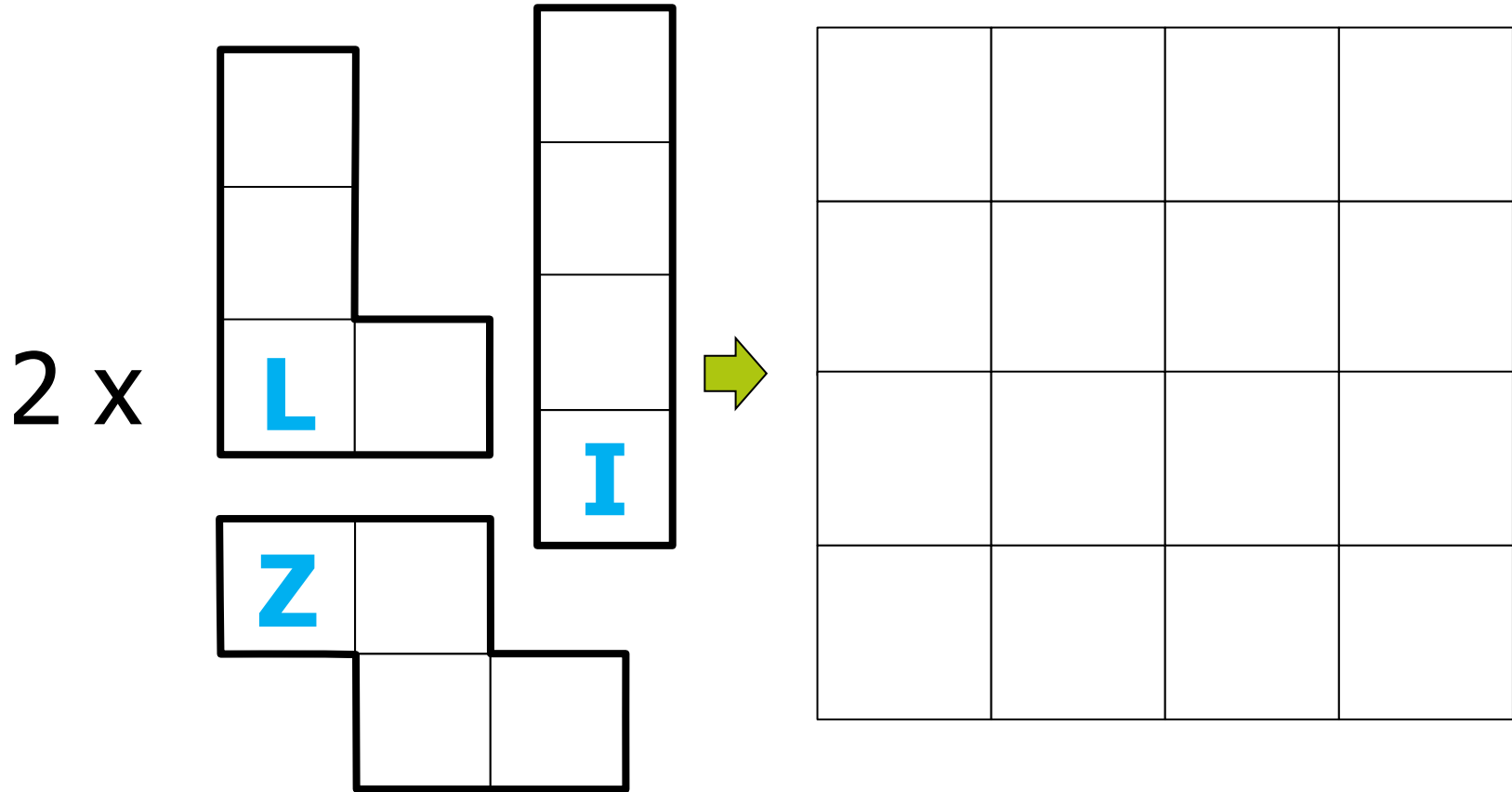








Content Unlocked!

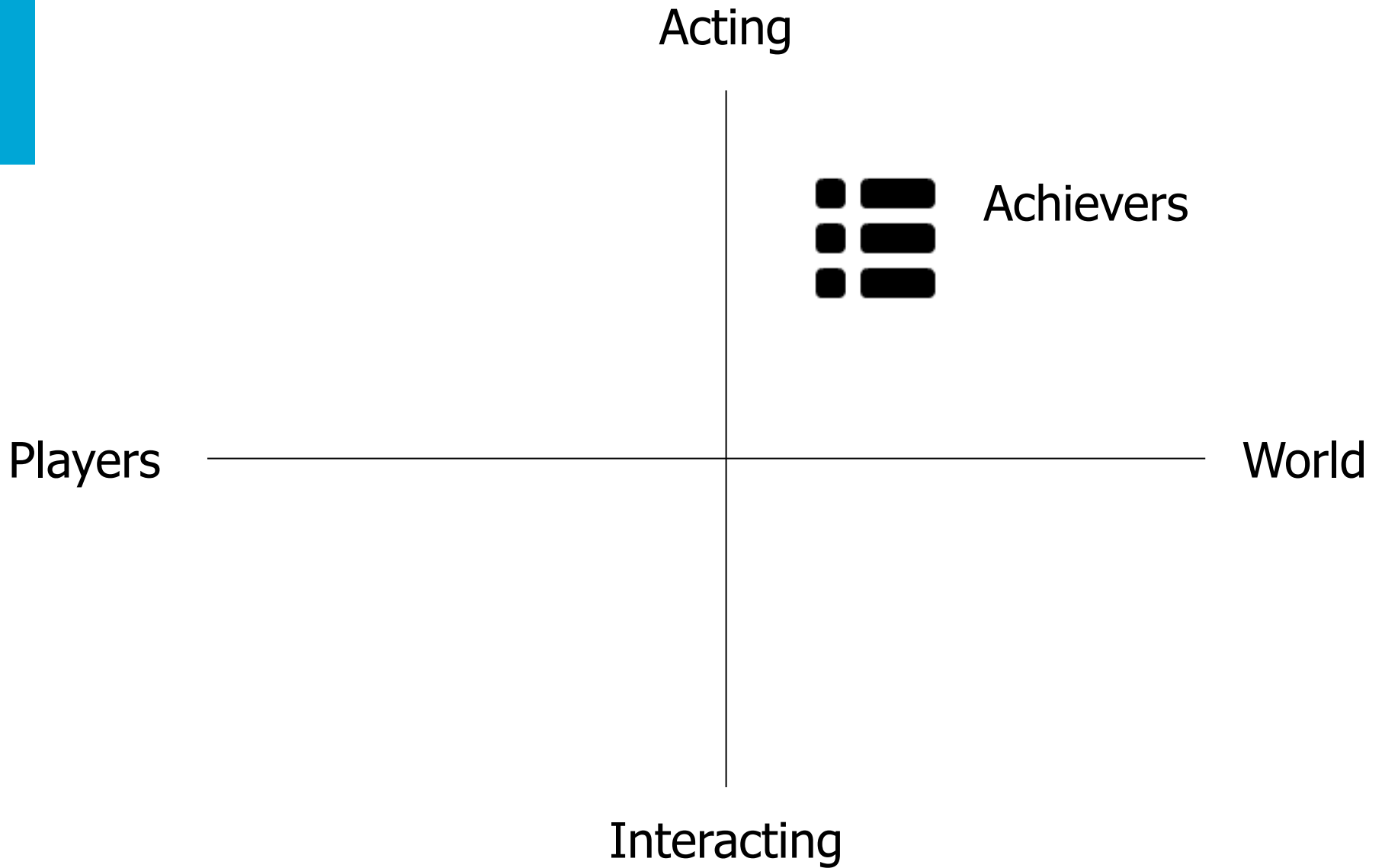


Acting

Players

World

Interacting



Acting

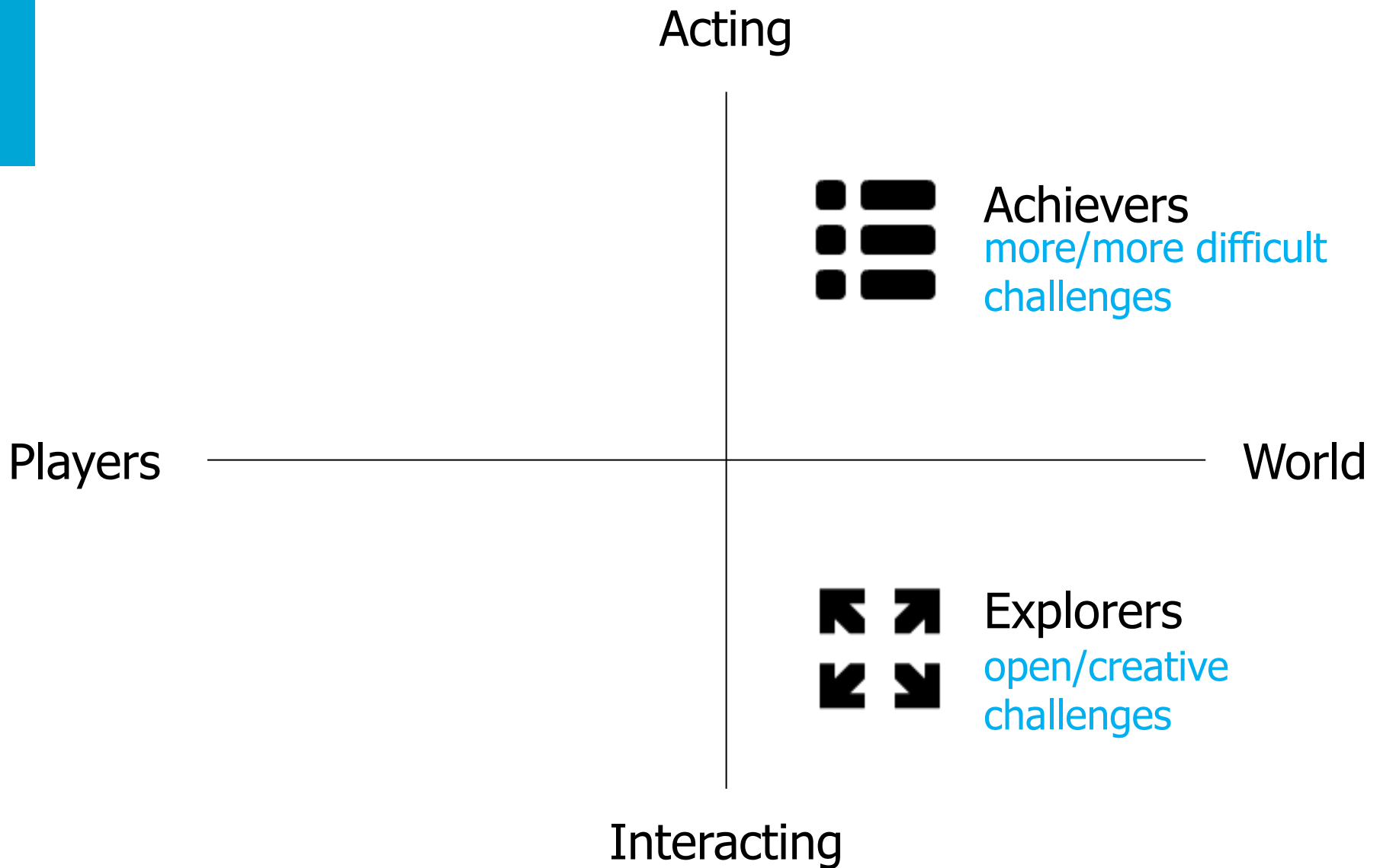


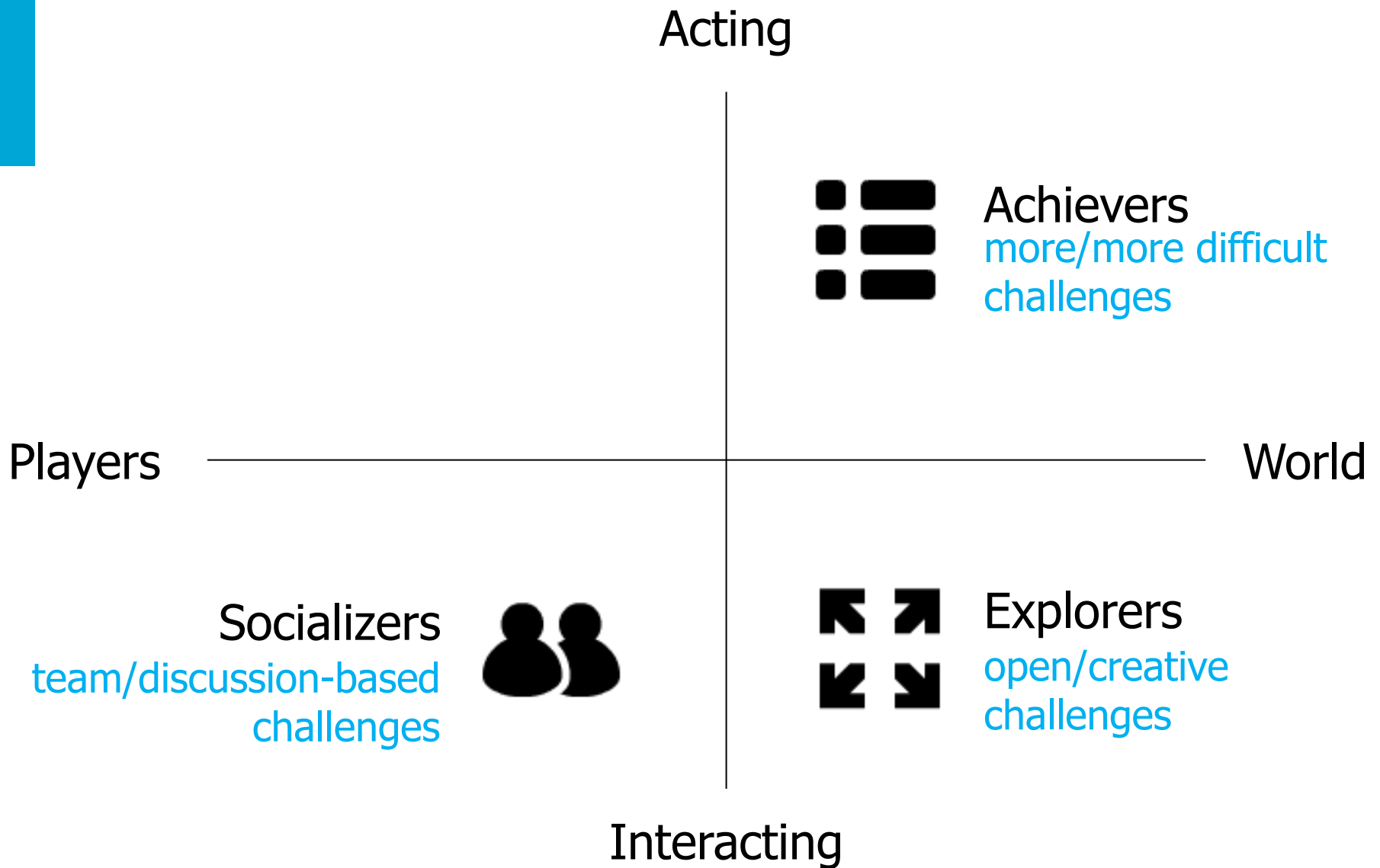
Achievers
more/more difficult
challenges

Players

World

Interacting





Acting

Winners
competitive/single-winner
challenges



Achievers
more/more difficult
challenges

Players

World

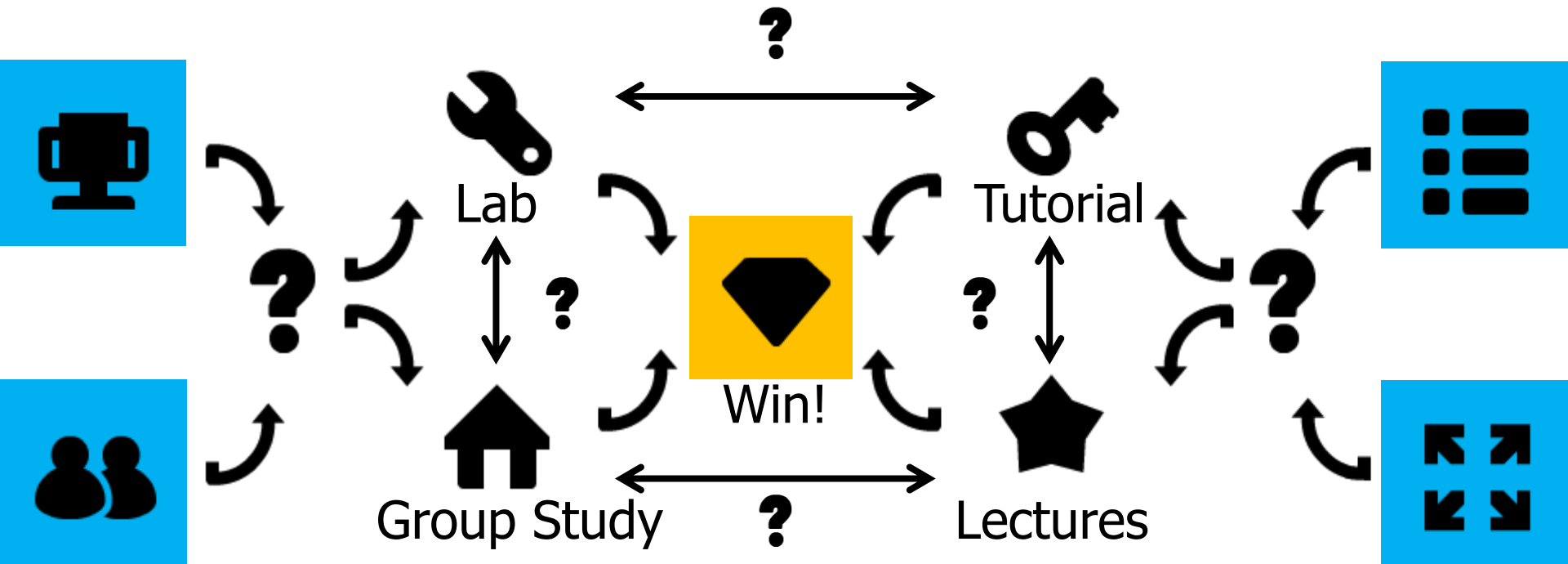
Socializers
team/discussion-based
challenges

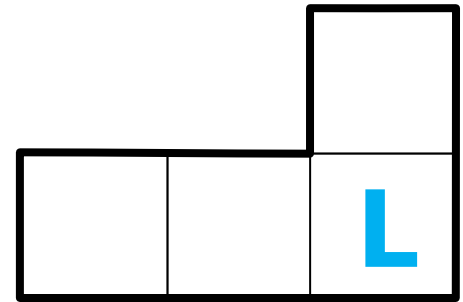
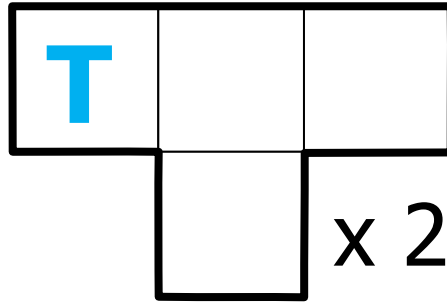
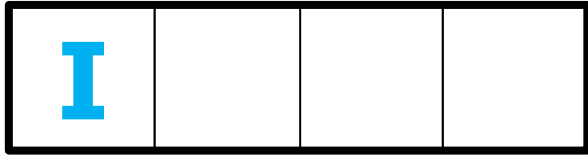


Explorers
open/creative
challenges

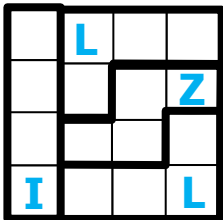
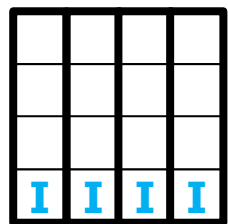
Interacting

Designing a course is like creating a complex puzzle

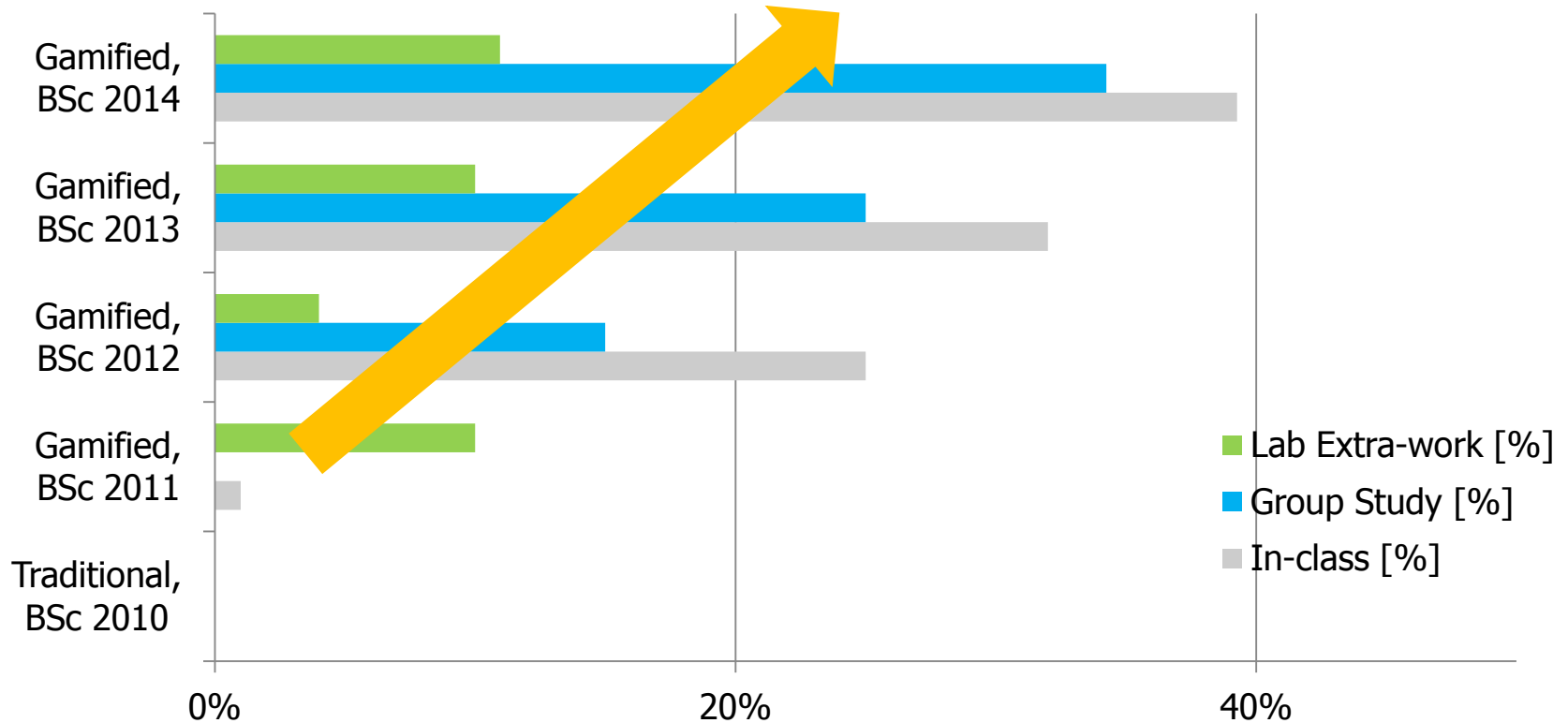




Does gamification work?



Gamification works!



Extra work due to gamification, relative to traditional [% all students]

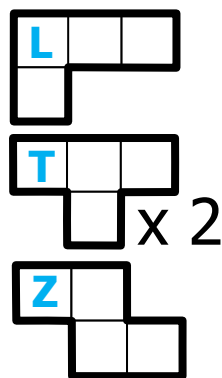
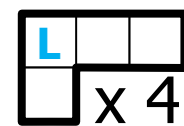
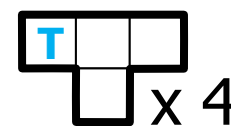
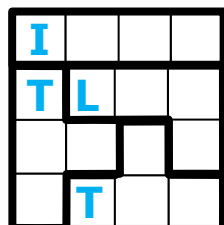
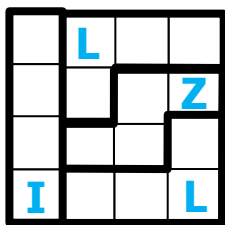
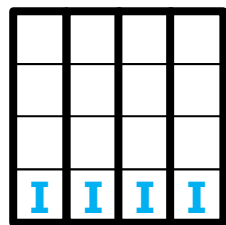
What Happens When A Student Does Not Like the Course Topic?

“ I want to thank you for showing that even though I'm not that good at written exams, I still can excel at other points in my study. I'd love to have a copy of my badge, as physical reminder of a course that made me eager to learn about things. Even when some of those things will never really have my interest.

This course, and the way it was given, learned me a few things about what motivates me, and only for that reason it was totally worth getting up for every lecture.

”

Designing a course is
like creating a complex puzzle



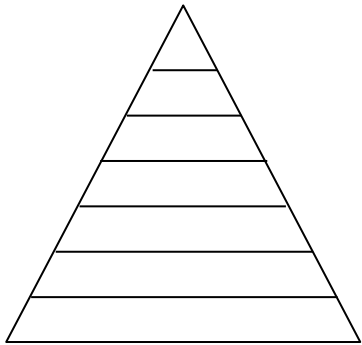
Gamification works!



Lumaxart Trophy Winner

A. Iosup and D. Epema, An Experience Report on Using Gamification in Technical Higher Education, ACM SIGCSE'14. <http://goo.gl/V97zSW>

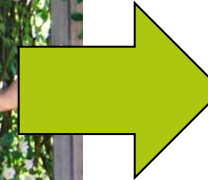
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