Towards systematic skills development for Czech doctoral candidates

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"Learning without thinking is useless. Thinking without learning is dangerous."

- *Attributed to Confucius, Analects*

Specialized, disciplinary education

(local, mentors)

+ **"Core" understanding: Traditions of humanity's scientific, academic endeavors**
+ **Career options in both academia and beyond**
  → _**Not necessarily**_ **local, mentors**
  → **Towards systematization= cooperative**
——— **efforts**

KREcon examples

➜ DocEnhance
➜ Charles University
➜ Ministry of Education, Youth and Sports of the Czech Republic
➜ Doctoral schools discussions…

1. Towards systematization: Cooperative, cross-administrative boundary local efforts

Cases:

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a) Understanding science, academia

➔ NTK-CTU in Prague Scientific Writing course
➔ NTK instructional workshops (esp. Understanding the state-of-the-art/novelty, writing dissertation)
➔ STEMskiller:skills map for mentors of early career researchers (and interested ECRs)
➔ NCIP Case Studies for specific funding opportunities

b) Career options, academic and non-academic

➔ STEMskiller, skill map for mentors
➔ NCIP Case Studies CTU in Prague, Faculty of Civil Engineering Research Office: individual consultations pilot
➔ Future: CTU in Prague Career Center, doctoral candidate support in English

Systematic local, cross-administrative boundary cooperation

a) Understanding science, academia
➔ **Credit** in doctoral programs, in various schools/departments and Prague research universities
➔ **On-demand, open** educational offerings (YouTube, Moodle, individual consultations)
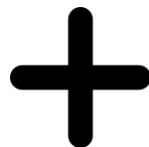 ◆ No fees, for anyone…not just doctoral candidates

a) Career options
➔ **On-demand, open** educational offerings
➔ Individual, **tailored** consultations
➔ Future: workshops in **English** regularly offered by career support office

Systematization, local level

➜ Courses for **credit** (i.e., part of doctoral education itself)
➜ **On-demand** offerings
  ◆ Meet learners where they are already (e.g., YouTube)
  ◆ Can assist with dearth of teaching talent in small countries
➜ **Personalized** in-person (video=perfectly fine) consultations
  ◆ Where the magic happens
  ◆ Dream: don't leave any learner behind (without reducing rigorous requirements) while being candid about career prospects
    ● Maybe stricter entry requirements
➜ Open area: very little systematic effort (to date) on **teaching/instructional methods and managerial**

2. Towards systematization: Cooperative effort _across_ local and national boundaries

Case:
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NTK

50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

+

CTU
CZECH TECHNICAL
UNIVERSITY
IN PRAGUE

+

EUROPEAN UNION
European Structural and Investment Funds
Operational Programme Research,
Development and Education

MŠMT
MINISTRY OF EDUCATION,
YOUTH AND SPORTS

STEMskiller

SKILL SET MAP FOR MENTORS OF EARLY CAREER RESEARCHERS

Definitions, annotations, and links to high-quality open educational resources in English useful in guiding students towards excellence. [Read more...]

Competencies are grouped into four areas, with subsections:

1. Research and scholarship
2. Learning, teaching, and supervising
3. Career management
4. Engagement, involvement, collaboration, transdisciplinarity, and inquisitiveness

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See also

- About STEMskiller
- A-Z Topic Index
- Propose a new resource
- Review an annotation

Systematic aspects: Not reinventing the wheel, while saving mentors' time

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➜ Links to **existing** high-quality, open, non-commercial resources in English
  ◆ Cross-institutional (excellent content exists, but the hard part is finding it)
  ◆ No geographical boundaries (only **linguistic** boundaries)
➜ Learners can be anywhere in the world
➜ Brief annotations (over time, perhaps peer review of annotations)
  ◆ Short enough for those mentors and mentees who are really interested
  ◆ If someone is not interested enough to read an annotation, perhaps they should not be in a doctoral program
➜ Includes **teaching methods and managerial** sections
➜ Main audience: **mentors**, but also **interested mentees/ECRs**
  ◆ **On-demand** self-learning

Cross-institutional use example

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Systematic aspect of international boundary crossing: Mobility works, but small countries still face "brain drain" issues

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- ➔ EU mobility initiatives and funding mechanisms work and are very important
  - ◆ Competition for top talent between European countries
  - ◆ How to **make room for this talent** in existing academic system(s) in small countries?
- ➔ New Czech Science Foundation programs (e.g., POSTDOC INDIVIDUAL FELLOWSHIP – 2023 OUTGOING, https://gacr.cz/file-download/49774)
  - ◆ Fantastic; similar to EU fellowship programs (structure, requirements), preparing ECRs for EU proposals
  - ◆ **Includes well-funded "return to CZ"** phase
- ➔ Lingering long-term issue: not just what happens after the doctorate, but (for those that make it that far) *what*

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