Here we present the final project for the course [Knowledge Representation and Knowledge Extraction](https://www.unibo.it/en/study/phd-professional-masters-specialisation-schools-and-other-programmes/course-unit-catalogue/course-unit/2023/490896), taught by Professor [Aldo Gangemi](https://www.unibo.it/sitoweb/aldo.gangemi) during the a.y. 2023/2024 at the University of Bologna, part of the Master’s program in Digital Humanities and Digital Knowledge.

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The digital asset is accessible for at the [GitHub repository](https://github.com/FranciscoWu/KRKE-Project).

**Objectives**

The aim of this project is to create an ontology that would represent the dynamics between paid educational systems and free learning resources. This includes their accessibility, credibility, and impact on learners' career trajectories. The framework seeks to map ties between these educational paths, offering a tool for analysing their impact on individual choices and societal perceptions of education. We would also like for our project to be a part of some grater research on the evolving landscape of modern learning practices and accessibility in education.**INTRODUCTION**

*In today's world, where knowledge is power, at what price should education come?*

The world we live in today is so rapidly changing that education becomes not only a whim but a necessity to survive. If you pause for even a moment, you risk being left behind.

As Lewis Carroll has so neatly put it: “My dear, here we must run as fast as we can, just to stay in place. And of you wish to go anywhere you must run twice as fast as that”.

However, accessing this knowledge presents a dilemma. Traditional institutions like universities proved their worth over centuries, providing students with precious network, feedback, ability to debate and (very important for some) a signed paper, claiming you have concluded your studies in the field - that is, a coveted *Diploma.* Yet, in an era where innovation outpaces tradition, can these institutions keep up? Is the knowledge we get there really worth literal years of attending, can it keep up with the reality? Can people allow themselves to spend at least two years in a classroom to simply learn something that they’ve already known for years scientifically proven to be true?

Here is where the on-line resources come into mind - fast, brief, always up-to date. Yet, they bring new challenges. For here we will have so much more choice than in the classic educational system: podcasts, YouTube videos, DIYs, paid courses, shared ones, pirated copies of practically everything, astrology and tarology, the best of the best alongside with the doubtful (or even sometimes dangerous) delusions.

Not so long ago we could’ve safely say that most of the time a course sold online would probably be something good, or at least worth its value (we have to keep in mind our common prejudice that internet is a place of free knowledge and that anything paid there looks suspicious to us, or has to bring us billions for its price). However today even that is no more the case. The best course on python can be absolutely free, without even a hint to make at least a donation to it’s author, and a course on how to brew a love potion to bring back one’s ex can cost thousands (and to add insult to the injury - will grant you a status of a “certified sorcerer” upon finishing it).

Our project explores this educational crossroads: Should education be free, paid, or traditional? Where do short online courses and DIY content fit into the larger picture? Most importantly, how do we distinguish timeless wisdom from pseudoscience in an age of information overload? Through this work, would like to focus on this dilemma and elaborate on the different ways to educate oneself.

**OR**

In today's world, where knowledge is power, what price should we pay for education?

The world is changing so rapidly that education has become a necessity rather than a luxury. As Lewis Carroll aptly wrote, “Here we must run as fast as we can, just to stay in place. And if you wish to go anywhere, you must run twice as fast as that.” While this sounds exhausting, the pursuit of knowledge can—and should—be an engaging journey.

However, accessing this knowledge presents a dilemma. Traditional institutions like universities have long been revered for their structured learning, networking opportunities, and the coveted diploma—a formal acknowledgment of expertise. Yet, in an era where innovation outpaces tradition, can these institutions keep up? Are they worth the significant time and financial investment, especially when much of the knowledge they offer is already widely accessible?

Enter online resources: fast, up-to-date, and readily available. These platforms, ranging from YouTube to specialised online courses, cater to learners seeking flexibility and immediacy. Yet, this abundance comes with its own challenges. How do we navigate an overwhelming array of options, from credible courses to dubious claims? The best course on Python might be free, while a questionable “certified sorcerer” course could cost thousands.

Our project explores this educational crossroads: Should education be free, paid, or traditional? Where do short online courses and DIY content fit into the larger picture? Most importantly, how do we distinguish timeless wisdom from pseudoscience in an age of information overload? Through this work, we aim to shed light on these pressing questions and examine the evolving ways we educate ourselves.

Nowadays education has become an even wider spectrum, coming in various shapes and forms from traditional paid systems to free online resources. Each approach offers unique advantages and challenges. In this section we try to outline the key characteristics of those methods, providing a comparison of their structure, accessibility, credibility, and overall impact on learners. By exploring these differences, we aim to highlight the dynamics of modern education and the factors shaping individual choices in pursuing knowledge.

**Key Characteristics of Paid Education and Free Learning Resources**

1. **Paid Educational Systems**

Paid education often involves formalised institutions, such as universities, private training centres, or online platforms offering certifications. Key characteristics include:

- Credibility: Programs are generally vetted, offering recognised qualifications (e.g., diplomas or certificates).

- Structured Learning: Courses follow set curricula with expert guidance, ensuring in-depth coverage of topics.

- Cost Barrier: Fees can limit accessibility, making it less inclusive.

- Networking Opportunities: Students gain access to professional communities and mentorship.

**2. Free Learning Resources**

These include platforms like YouTube, MOOCs, or open-source communities. Notable characteristics are:

- Accessibility: Free content lowers entry barriers, reaching a global audience.

- Flexibility: Learners control their pace and choice of topics.

- Variable Credibility: Quality ranges from expert lectures to amateur advice, creating a need for discernment.

- Limited Interaction: Resources often lack direct feedback or mentorship, reducing depth of engagement.

Balancing these approaches highlights the diversity of modern education and the challenges in ensuring quality and inclusivity.**The diversity of modern learning options:**

**1. Universities**

* **Description**: Traditional institutions offering structured curricula, mentorship, and recognised qualifications.
* **Pros**: High credibility, in-depth knowledge, access to professional networks, and opportunities for personal development.
* **Cons**: Expensive, time-consuming, and may struggle to adapt quickly to new trends or technologies.

**2. YouTube**

* **Description**: A platform with a vast array of free tutorials and courses on nearly every topic.
* **Pros**: Free, accessible worldwide, updated frequently, and offers visual and practical learning methods.
* **Cons**: Variable content quality, lack of interaction or mentorship, and no certification.

**3. DIY Content (TikTok, Blogs)**

* **Description**: Bite-sized, often informal educational content created by individuals.
* **Pros**: Quick, highly practical, and relatable; often bridges gaps between professional and personal learning.
* **Cons**: Lacks depth, quality control, and may promote pseudoscience.

**4. Paid Online Courses (Coursera, Udemy, MasterClass)**

* **Description**: Comprehensive, structured courses taught by experts, often with certification.
* **Pros**: Flexible, credible, and sometimes more affordable than formal institutions.
* **Cons**: Quality can vary, and access is limited by cost.

**5. Free Platforms (GitHub, devtodev)**

* **Description**: Open-source platforms offering resources for learning coding, analytics, and professional skills.
* **Pros**: Highly specialised, peer-reviewed, and community-driven; fosters practical, hands-on learning.
* **Cons**: May require prior knowledge or mentorship to navigate effectively.

**6. MOOCs (Massive Open Online Courses)**

* **Description**: Platforms like edX and Khan Academy that combine free and paid content.
* **Pros**: High-quality, accessible, and often created in collaboration with universities.
* **Cons**: Self-paced nature requires motivation, and certification might be limited to paid tiers.