Graduate skills and employability: Focus interviews with selected job market stakeholders

UPSKILLS Intellectual output 1.5

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Table of contents

Executive Summary

The final stage of the UPSKILLS needs analysis involved focus interviews with job market stakeholders. This report presents the method used to conduct and analyse the interviews we carried out with twelve job market stakeholders, the main findings of this UPSKILLS task, a discussion of how these findings relate to the results obtained in the previous steps of the needs analysis, and the aims of the UPSKILLS partnership more generally.

In relation to graduate employability, all the interviewees agreed that there is still healthy demand in the industry for graduates with linguistics and language-related degrees, as also emerged from our questionnaire results. That said, computational linguists and language and linguistics experts with some technical background and willingness to be further trained for a particular role are mostly sought after in the industry. When it comes to the skills that are most relevant for graduates of linguistics and language-related programmes seeking employment in the industry, our interlocutors agreed that it is crucial that they come equipped with problem solving and analytical skills, as well as a sense of creativity. Communication as well as interpersonal skills were also deemed imperative, together with presentation skills. What is more, the interviewees emphasise that nowadays students need to at least have some notion of computational methods, since technical skills of this sort are a decisive factor in hiring staff.

In regard to the formation of our target students in higher education, our interviewees are of the opinion that a more goal-oriented and hands-on approach is necessary and that existing curricula should incorporate more technical and quantitative data analysis training. At the same time, the need to place more emphasis on the development of transferable skills as well as specialised training that will enable graduates to think outside the box and come up with their own solutions to typical industry workflow problems was also underlined. Such a curriculum would prepare language and linguistics students better for the industry, which mostly looks out for a potential employee's versatility, quick learning ability and technical strengths.

1. Introduction

In the interest of refining and deepening our understanding of the trends emerging from the questionnaire analysis (see Gledić et al. 2021a) that was carried out at the penultimate stage of the UPSKILLS needs analysis, our last step in this process involved interviews with job market stakeholders. The original plan was to try and organise focus groups too, but the social distancing measures imposed due to the Covid-19 pandemic in most partner countries at the time when this task was planned made it impossible to proceed in this fashion. Due to this limitation, we opted to conduct online interviews with individual stakeholders instead, but also tried to hone in on some preliminary patterns emerging from the survey through an open group discussion with the members of our Advisory Board during our first meetings with them at the end of April 2021.

In this report, after briefly presenting the method used to conduct and analyse the interviews (section *2. Method*), we will present the main findings of this UPSKILLS task (section *3. Analysis*), concluding the discussion with an assessment of how these relate to the results obtained in the previous steps of the needs analysis (section *4. Concluding remarks*).

2. Method

As already mentioned above, the aim of this focus interview task was to follow up on the questionnaire administered in the previous step of our needs analysis in order to **gain a better understanding of the needs of the industry** when it comes to hiring graduates of linguistics and language-related degrees. More specifically, we wanted to further assess whether the results obtained through the questionnaire are indeed representative of the more general attitude that businesses have towards our target graduates and their formation, and also gauge in more detail the reaction that key industry stakeholders may have in relation to the patterns that arose in the collected answers to our survey. In order to identify those aspects of the questionnaire that the focus interviews would eventually concentrate on, we discussed, in an open-ended manner, some preliminary results with the UPSKILLS associate partners during two Advisory Board meetings that took place at the end of April 2021. This served as an informal pilot and enabled us to eventually prepare an interview guide that would zoom in on those themes that are most relevant to industry stakeholders. In this regard, in preparation for the interviews, we implemented a technique that is widely used in grounded theory and which relies on "mostly observation and unstructured interviews in the initial stages, then more structured forms of data collection as the study becomes more focused" (Dey 2004: 80).

A total of **twelve job market stakeholders**, coming from **eleven different companies** which focus on or incorporate language and linguistics in their business, participated in our one-on-one interviews. These companies, the names of which will not be disclosed in this

report in the interest of safeguarding the participants' anonymity, vary in size and come from different domains, such as **language service providers**, **the automotive industry, language technology**, and **insurance services**. All our interviewees occupy a managerial and/or administrative position, leading and/or participating in teams across Europe that range from five to over one hundred members, and their areas of engagement can be grouped into four main categories: **translation**, **localisation**, **computational linguistics** and **speech recognition**. More specifically, most of our interview participants work within the fields of natural language understanding and processing and machine translation, providing cross-sectional services to diverse entities. Such roles require research, development, monitoring, solutions for the implementation of new product-oriented services, data management, speech processing technology and quality assurance. Overall, our interviewees' own backgrounds vary from **translation** to **artificial intelligence**, **analytical linguistics**, **language engineering**, to **physics**. Thus, our interviewees constitute a group of stakeholders that can be considered representative enough of the various industries that seem to be hiring linguists and language experts the most these days (see Ferraresi et al. 2021).

To maintain this equilibrium in the representation of different business sectors dealing with language and linguistics, some interviewees were recruited via email, after confirming their availability when they participated in our original survey, and the rest were identified through the Consortium's contacts. All interviews lasted 30-40 minutes. Since some interviewees were hesitant to have their interviews recorded in our initial correspondence with them, all interviewers were instructed to take notes during the interviews on a dedicated template document, which also included a guide for the interview process (see Annex 1). The reason why we opted for a **semi-structured format** of this sort was to ensure an eventual **comparability of responses**. Against this backdrop, following a short icebreaker introduction, during which interviewees were encouraged to talk about their own line of work, they were then asked to comment on the results obtained through our preceding questionnaire administration. To ensure maximum engagement, all interviewers used a presentation with graphs and lists showcasing these findings (see Annex 2). Following this, each interview was concluded by asking participants if they wished to add anything they deemed relevant to the discussion and checking with them whether they would be willing to provide us with a description of a task that is common in their everyday workflow, which we would then eventually adapt and incorporate in our learning content development.

3. Analysis

When it comes to analysing the interviews, we performed a "conventional content analysis" (Hsieh and Shannon 2005: 1279), during which we **identified common patterns and themes** from the obtained data. In this section, we will discuss the most prominent such themes,

these being, graduate employability (section *3.1*); the most sought out skills and knowledge in the industry (section *3.2*); and higher education formation and workplace reality (section *3.3*). Each of these themes is explored and assessed against the background of the aims of the UPSKILLS partnership and the preceding questionnaire analysis in turn.

3.1 Graduate employability

All interviewees agreed that there is still **healthy demand** in the industry for graduates with linguistics and language-related degrees. Even so, there is also general agreement that **specialised language-related expertise** should also be complemented with some **technical know-how**. In this regard, it seems that there are 'currently very few roles in the industry for linguists without any technical skills' (A5). Candidates with 'a mixed background (linguistic/technical)' (A6) are generally preferred nowadays, at least when it comes to full-time jobs in the industry. As one interview participant notes, for instance, 'being bilingual or having a degree in languages is not enough; those who perform technological roles have an important advantage' (A1). This appears to also be consistent with the trend in the industry of hiring language specialists to take on roles which involve a broader range of responsibilities than what they have been originally trained to do, such as 'being able to code or even just know how algorithms work and how machine learning works' (A5). For example, one interviewee who works with machine translation noted that 'big companies and organizations may have in-house linguists for revision and to do more advanced work too, e.g., help with the training of machine translation engines,' (A7) while another working for a translation company suggested that there is demand for employees who can take on '**hybrid roles**,' (A1), combining being a translator alongside being a vendor and project manager too.

What is more, most of our interviewees suggested that several companies are actively looking for employees with **specialised language and linguistics knowledge**, rather than simply native speakers of a language, since they value the expertise they can bring along to their teams. That is because a native speaker of a language may 'know their language but they cannot really reason or talk about it' (A6) or 'look for useful data'(A10) in it. Linguists, on the other hand, 'have the ability to **deal with ambiguous and unstructured data**' (A4), and can thus, for instance, 'extract data that is relevant in a mass of very messy data and decide how to sample and annotate it' (A4). That being said, there are also domains where the need for "pure" linguists and language specialists may be in decline. An interviewee who works in the field of automatic speech recognition, for instance, mentioned that new end-to-end systems seem to render linguists redundant, when in the early days they were indispensable for "transcription, correcting, providing canonical pronunciations, creating dictionaries and reviewing recordings" (A8). So the combination of linguistic knowledge and technical skills seem ideal.

Even so, this does not mean that the need for linguists and language experts will become obsolete anytime soon. All in all, there is general consensus among our interview participants

that companies are generally on the lookout for relevant graduates, as a wider awareness of how languages work in general and how they differ from each other is often needed. After all, some companies ask their employees to work on languages they do not even speak. All in all, the **need for linguistic expertise seems to be on the rise** for a wide range of languages. As one interviewee noted, 'now the industry sees big markets in India, Africa and these clients need to be served in their languages' (A11). Still, recruitment is not always on a full-time basis. A general trend seems to be that smaller companies work almost exclusively with '**freelance linguists**' (A7) and language specialists, especially when their input is needed for their respective languages 'only for a few hours a week' (A6). A main reason for this, as one interviewee pointed out, is that there are 'several fluctuations in the market from year to year' (A2). This means that a company may not be able to 'afford to hire people in the current state of work uncertainty (the demand does not seem stable) and administrative charges imposed by the state' (A9), as another interviewee correspondingly noted. Even so, much like smaller companies meet their needs relying on external experts, such as freelance translators and language consultants contracted by partner companies, large companies and organisations seem to very often **outsource linguistic expertise**, but also have **in-house positions** for relevant graduates too. One interviewee, who works for a multinational technology giant, stated that, although this is just a fraction of the total number of employees in their company, 'there are about 130 linguists working there' (A4).

Freelancing and part-time employment may be prevalent for some translators and language experts, but **computational linguists**, on the other hand, seem to be increasingly sought after for **full-time contracts**. In fact, more than half of our interview participants noted that their companies continuously employ computational linguists and that there is a growing demand for linguists with such a background across the board. In relation to this, one interviewee in particular (A3) noted that, while some technical knowledge is necessary, further training is also required for most posts, and that their company employs individuals exclusively on full-time permanent contracts due to the **intensive and lengthy training** that they would need to undertake for the job, and the **investment in time and resources** that the company makes in this regard. If this is any indication, it seems that computational linguists or at least language and linguistics experts with some technical background and a willingness to be further trained for a particular role are more likely to find stable long-term employment in the industry. Correspondingly, seeing that a career as a freelancer is also a possibility for the graduates we target, it was also noted that, since a freelancer does not have the luxury of getting training as most in-house employees do, it is even more important for them to 'come prepared' (A11).

3.2 Most sought out skills/knowledge for the industry

Throughout the interviews, our participants made several interesting observations in relation to the skills and knowledge they expect language and linguistics graduates to be equipped with when entering the industry. Rather unsurprisingly, if we take into account the

discussion in the preceding section, when it comes to disciplinary knowledge, our interviewees seem to place most emphasis on **computational knowledge**, which is **notably missing from several humanities degree curricula**. It thus appears to be imperative for students nowadays to at least have some notion of computational methods, since, as we have already seen, technical skills of this sort are a decisive factor in hiring staff and are very highly sought after in the current job market. Similarly, participants coming from the translation industry also noted that translators, as well as other employees working on language and linguistics tasks there, are nowadays required to have some **post-editing skills** too.

When specifically asked about the most desirable skill for employees working on language and linguistics tasks, there was overwhelming agreement that **problem solving skills** are the most essential. Several interviewees believe that this skill is lacking in most graduates (and not just language/linguistics ones), who often seem to "block" when asked to tackle problems and come up with their own solutions. As one interviewee puts it, they typically 'ask for precisely defined tasks and steps, lack initiative and need to be closely guided' (A8). This skill is closely related to several other skills. For example, it follows from our discussion with industry stakeholders that problem solving and **creativity** are intrinsically interwoven, in the sense that most companies expect the solutions that their employees come up with to not be just efficient and effective but also creative and innovative. After all, as one of the interviewees noted, in relation also to technical skills, 'mentoring and guidance is largely available on the job, but the employee is expected to access the resources in an autonomous way: learn to work with sub-optimal tools or be able to create their own, because the engineers are there to build the actual product and not to develop tools' (A4). All in all, it seems crucial for an employee working with language to be capable of developing new creative solutions that allow the company to reduce time devoted to problem management.

Similarly, an ability closely related to problem solving, and also frequently identified as pivotal for the positions under question is that of **analytical skills**. Several interview participants defined their needs in this regard as dependent on the sequence *analyse request/problem > understand the specific needs > see which solution to adopt (typically based on data)*. They particularly emphasised the **ability to hold multiple perspectives**. Referring specifically to language graduates, some interviewees mentioned that they tend to lack the ability to abstract away from their own perspective and to look at problems from, say, an engineering or some other point of view. In this vein, language and linguistics graduates were also described as having a 'hard time detaching from their own interests, which are often very narrow and not relevant to the task at hand' (A8). In other words, while knowledge of specific languages and linguistic theory is generally considered to be useful assets, the **ability to apply this knowledge to various practical tasks**, through reasoning about concrete problems, making choices and arguing for them, is equally important. As one interviewee put it, rather than focusing on very specific problems of the academic type (e.g. by conducting detailed structural analyses), language and linguistics graduates should be prepared to 'get out of their "linguistic boxes"' (A8) and adopt a 'bigger picture' approach (A9), in which the central

element is the problem to be solved and the focus is on the kind of solution that is needed (which might or might not require a structural analysis).

Communication as well as **interpersonal skills** were also deemed imperative, since employees working on language-related tasks should be able to communicate flexibly and flawlessly, especially when taking on project management roles. In this setting, an interesting case is that of **presentation skills**. Several interlocutors suggested ranking their importance higher, and ranking their presence in language graduates lower than in the questionnaire results. They highlighted that presentation skills are not just performance skills, but are also about 'being able to come up with a synthesis, condensation of information, get across the right message' (A10), which is particularly important in contexts where technological companies need to present their work to non-technological stakeholders, and which is also where language graduates seem to struggle (A2), failing to deliver precise presentations that have a clearly identifiable point. As one of our interview participants put it, 'graduates often lack the ability to take decisions and provide data to back their decisions; they have good ideas and the necessary knowledge but they seem too shy or not trained to make an argument for a case' (A11).

Along similar lines, the importance of **project management** skills, **working under pressure** and **attention to detail** were also confirmed by a number of interview participants. Unsurprisingly, there seems to be consensus among our interviewees that their employees should be **capable of organising and planning their work autonomously**, as well as having **management skills**, especially when it comes to managing files which they are working on. While the ability to work under pressure was also brought up, it is believed that this is a skill which one develops on the job as there is a marked difference between the pressure faced by students and that faced by professionals. Additionally, in a few cases, sensitivity towards cultural diversity and knowing the local context and the local language with its different registers were also commented on as important.

3.3. Higher education formation and workplace reality

Having presented our interviewees' take on the skills that are most relevant for graduates of linguistics and language-related programmes when it comes to seeking employment in the industry, we now turn to their opinion on the extent to which current higher education curricula adequately prepare their graduates for the workplace.

As already noted above, there is a general preference for employees who are in possession of a higher education degree, but there is also a slight apprehension as to how well these graduates are prepared for the sort of tasks that they will have to carry out when they enter a company's workforce. On the one hand, this preference towards graduates seems to be based on the assumption that someone who has obtained a higher education degree is bound to be more receptive to further training should the need arise. However, more than half of our

interviewees stated that **higher education formation often lacks the goal-oriented character of industrial work**. That is, higher education trains students to think independently and formulate their own research agenda, but, more often than not, a company needs its employees to solve a particular problem or lead to a commercial product in the most efficient way. Against this background, our interviewees generally agreed that, although in terms of knowledge graduates of linguistics and language-related disciplines are overall fairly well-prepared, they often lack essential skills of not only a technical (e.g. computational competences), but also a transferable nature (e.g. problem-solving skills, as we have already seen).

For one, it seems that, while achieving a thorough understanding of a single particular topic or area of research is a central aim for anyone engaging in an academic career, the industry places more emphasis on a **potential employee's versatility** instead. As we have already seen, companies tend to favour candidates who combine language-related and technical skills, and can thus contribute to more than one task in the company's workflow. In fact, most of our interviewees insisted that a prospective employee's profile needs to reassure them of such versatility in order to consider them for a job. Some commented favourably on the existence of joint and major/minor degrees in a number of Higher Education institutions, which allow graduates to be trained and develop skills in more than one area. In this regard, most interviewees believe that, alongside a big-picture, theoretical formation, curricula should also offer more **technical training** to students which will then reflect positively in their eventual job performance.

Perhaps unsurprisingly, language graduates are often described as 'not great with numbers' (A1), which points rather unambiguously towards the need to provide **quantitative data analysis training** even in disciplines traditionally seen as a safe havens for students wishing to escape mathematics, especially since for the industry, 'in the opposition between big and noisy vs. small and clean [data], the former seems to win' (A8). A related set of abilities that were identified as missing in language graduates was technical knowledge and skills, comprising computer science in general and the knowledge of how language technologies work and can be used in particular. At that, it should be underlined that such technical aspects were often highlighted not only as competences for using tools and being able to program, but also as requiring a deeper understanding.

In order to be better-prepared for the workplace, graduates also need to be **quick learners**. That is because, the specialised linguistic or even technical knowledge that graduates bring to the workplace does not always mesh seamlessly with the practical tasks that they will have to undertake on the job, and even though mentoring and guidance are to a certain extent available, employees are still expected to access and manage resources in an autonomous way. Sometimes this can clash with the expectations that graduates have in the first place. As a couple of interviewees noted, fresh graduates may sometimes be reluctant to deal with issues outside their specific area of expertise, which is altogether counterproductive in a business setting.

Perhaps more importantly, it was repeatedly suggested that, while instilling to their students a solid understanding of the field is important, higher education curricula need to place more emphasis on the development of **transferable skills**, like **problem solving**, **analytical reasoning**, **adaptability** and **creativity**. While acknowledging that some of these skills cannot easily be taught, most interviewees suggested that they could still be integrated into a curriculum through the discussion of particular use cases that may be typical in a commercial setting and the addition of problem-based tasks that would better prepare students for the workplace. In this respect, there is considerable consensus that higher education students should be aware of quality standards and requirements in the industry. In this vein, some interviewees commented positively on the existing trend in higher education to shift the focus from examinations and place it on presentations and project-based work when it comes to assessing students. Similar consensus appeared to be emerging among those interviewees who highlighted the growing appearance of industrial internship in higher education study programmes.

What is more, as people working in the language sector are often called to train colleagues, it is important for them to possess excellent **communication and presentation skills**. While several interviewees acknowledged that it is not difficult to integrate training related to such skills within higher education curricula, they also noted that just giving presentations is not enough. As already discussed above, being able to present work and ideas is very important, but needs to be coupled with an **ability to condense and meaningfully synthesise information** too, which is a skill that several interviewees feel graduates in the relevant fields often lack.

At the same time, the need for higher education curricula in the particular areas of languages and linguistics to include dedicated courses on **data handling** and **project management** too was also underlined by a number of interviewees. Such skills are crucial for language and linguistics graduates, as they often get project management jobs after a few years of working in the industry. In the same vein, having experience abroad is also highly valued as it does not only make prospective employees more sensitive towards cultural diversity, as we have already seen, but it also enables them to have a sense of independence which is very much sought after.

All in all, however, it is clear from practically all interviews that what seems to be lacking the most from existing language and linguistics curricula is **specialised training** that will enable graduates to **think outside the box** and **come up with their own solutions** to typical industry workflow problems. In the industry, overcoming such weaknesses is essentially what makes or breaks a career, with promotions to higher-level positions being actually dependent on an employee's ability to tackle problems creatively and independently.

4. Concluding remarks

Comparing the results of our focus interviews with the ones obtained through the administration of our survey in the previous step of the UPSKILLS needs analysis, a number of interesting conclusions can be drawn.

Most notably, perhaps, our original prediction for **a steady, if not increasing need** for graduates of linguistics and language-related disciplines in the industry is corroborated on both occasions. Even so, our in-depth interviews revealed a number of **caveats** that this need seems to come with. For one, it transpires that this increasing hiring trend is correlated with an equally increasing need for linguists and language specialists with a **strong technical background**, or at least individuals who are **receptive and quick learners** when it comes to specialised technical skills. In fact, it seems that quick learning, even when not coupled with a solid disciplinary/technical background, is preferred to a strong disciplinary background with a rigid attitude against tasks that fall outside one's comfort zone. At that, there may be a general sense among graduates of language and linguistics programmes that computer engineers may be preferred for technical positions that involve the analysis of language data, but, as several interviewees notes, many posts which are available in the industry, are in fact inaccessible to individuals who do not possess any formal education in linguistics or translation, since apart from technical know-how, **specialised knowledge** related to linguistic structure is also necessary in some domains. Discussing AI-based technology, for example, one interviewee (A11) noted that that expertise in linguistics (e.g. writing grammars) is necessary, as this is not a task that can be undertaken by individuals who are simply native speakers of a language without the relevant background.

When it comes to the role that higher education formation plays in preparing graduates of linguistics and language-related disciplines for the business world, our interviewees are of the opinion that a **different approach to teaching is necessary**: one which is more hands-on, informs students about the most salient facts that are relevant to their future vocation and makes them aware of the quality standards and requirements of the industry. This actually appears to mesh particularly well with our plans for the creation of learning content which focuses on problem and research-based teaching rather than traditional lecturing. All in all, what the industry seems to be expecting from higher education is graduates, who, apart from disciplinary and technical knowledge, are also equipped with good **self-management and organisation skills**, can **swiftly understand tasks** and have a heightened sense of independence when it comes to **taking initiative**.

At the same time, while the questionnaires pointed to an overall satisfactory level of disciplinary knowledge among the graduates in question, the interviews revealed multiple aspects in need of improvement. Several interviewees emphasised the importance of **text comprehension** and **text quality evaluation**, and highlighted in particular a lack of ability to distinguish between well- and poorly-written (or translated) texts that they often encounter in language degree graduates. Along similar lines, a more general need for better **problem-**

solving and **analytical skills** was also noted by several interlocutors. It is particularly interesting to consider such comments jointly with those related to disciplinary knowledge, and the results of the survey of curricula for language students (Gledić et al. 2021b), which indicate that language and linguistics students are exposed to a lot of structural analyses during their courses, yet they do not seem to develop sufficient (general) analytical skills.

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Annex 1 - Interview guide

Interview with:

Company:

Interviewer:

Date and time of interview:

<u>Steps to follow in the interview:</u>

A. ICEBREAKER

1. Thank you very much for your participation in this interview. (Show slide 2 of the presentation) I am representing the UPSKILLS consortium, an Erasmus+ partnership which aims at upgrading the skills of language and linguistics higher education students to better meet the needs of the industry. To do this, we will be preparing a blended-learning study component that will combine an interactive learning experience, featuring games, research-based teaching and examples of industry-based research.

2. The purpose of this interview, which will not last for more than 30 minutes, is to get some more detailed information from you regarding the skills that you would like graduates of language and linguistics courses to have in order to consider them for employment.

3. As far as I can tell, your area of engagement is _____.
    - Could you please tell me just a bit more about that?
    - What is it that your company specialises in?
    - How would you describe your role?
→ no need to spend a lot of time on this.. It's just to get the interviewee to feel at ease and establish rapport

Your notes:

B. INTERVIEW

→ The questions below are grouped per slide. They are generally related to what we would like to get from the interviews. You can of course change the order in each group, as long as you can gauge a bit of information on what we need to get. Obviously, interviewees may also talk about other things they may think are relevant. Encourage them to do so, of course, but make sure that the conversation does not veer completely off topic or veer off for too long, as there are a number of things that need to be covered.

4. I will now show you some results that we have collected through our survey to industry stakeholders and would like to ask for your opinion on them. More specifically, I would like to know if you think that they are representative of current trends in the industry, at least in your area of engagement.

5. (Show slide 3) We have already received a fair amount of answers from people working with companies that seem to hire graduates of languages and linguistics.
   - Do you think that there is a need for people with a languages or linguistics degree in the industry?
   - Does this justify hiring a specialised person to work full-time, or can the needs be met just by using external experts?

Your notes:

6. (Show slide 4) Our results indicate that there will be a continuous need for language and linguistics specialists in the future.
   - Do you agree with this observation?
   - Do you think that this refers to someone with expertise in the areas of language and linguistics or just native speakers of some language?
   - If the former, what do you think this expertise will bring to the post? i.e. What can someone with a degree in languages/linguistics offer more than just a native speaker of a particular language?

Your notes:

6. (Show slide 5) Our results indicate that the positions that languages and linguistics graduates are more often needed for are for Computational Linguists and Language Specialists.
- Do you agree with this observation?
- Do you think that current higher education curricula prepare students for jobs like this?

Your notes:

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7. (Show slide 6) The same seems to be the case with regard to the tasks that language and linguistics experts are most often called to undertake, with working with software and working with language data being the most popular options.
- Do you agree with this observation?
- Is this the case in your company too?

Your notes:

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8. (Show slide 7) Our results suggest that the most desirable skills for employees working on language/linguistics tasks are problem solving, communication and analytical skills.
- Do you agree with this observation?

Your notes:

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9. (Show slide 8) When it comes to skills that are in need of most improvement, technical and organisational skills move up in the list though.
- Do you agree with this observation?
- Do you find that studies do not prepare linguistics and language experts adequately in this regard?
- If yes, how do you think they could?

Your notes:

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10. (Show slide 9) Our results suggest that the knowledge and experience most valued by employees are language knowledge, computational skills, and localisation experience.
- Do you agree with this observation?
- How important do you think localisation experience is? Are there different skills or knowledge that you would expect someone to have in different countries in your line of business?

Your notes:

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11. (Show slide 10) When it comes to knowledge/experience that are in need of most improvement though, computational skills and, most importantly, project management top the list.
- Do you agree with this observation?
- How do you think that higher education could help language and linguistics students with project management skills?

Your notes:

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11. Before closing this interview, there is one more thing that we would appreciate your expert opinion on. In the interest of developing our students' problem-solving skills, we have decided to incorporate in our curricula tasks that simulate real-world problems (possibly based on scenarios about common industry workflows)
- Do you think this is a good idea?
- Would you be willing to work together with us on a task description that is based on a real-world problem (possibly from your company) that the students can work on. This could also be a real task that our students can solve for you.

- If yes, are you ok with us passing on your contact information to our team members that are in charge of this? We realise that you have very limited time, so they would only request a short 15-minute meeting with you, and will get in touch at least a month before your input would be needed.

Your notes:

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| |

12. These are all our questions for you. Is there anything you'd like to raise yourself?

Your notes:

| |
| |

C. CLOSING

13. Thank you very much for your time and availability. We greatly appreciate your input. Would you like to be notified when our report of the interviews is ready? If yes, we could also send you a copy for your perusal. Otherwise, you can always look for it on our website (https://upskillsproject.eu/) some time around the end of June.
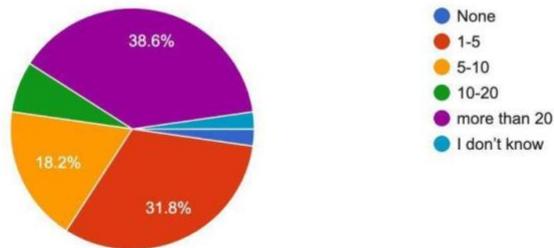
Does the interviewee want to be notified? If yes, please add their email below so that we send them the deliverable when it's completed.

| |

Annex 2 - Slides used during the interviews
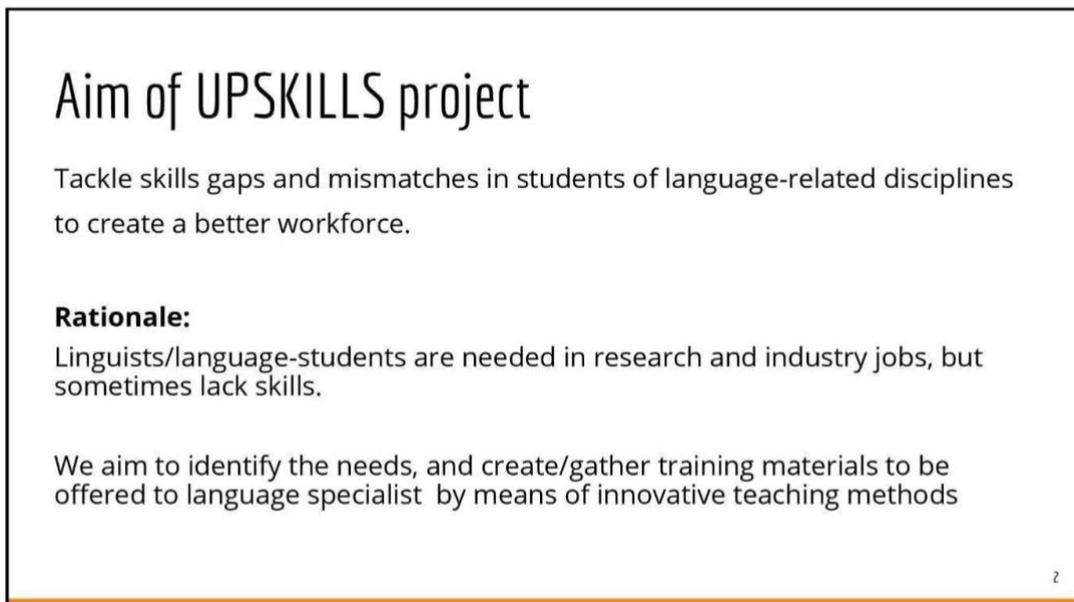
Interim results of our survey

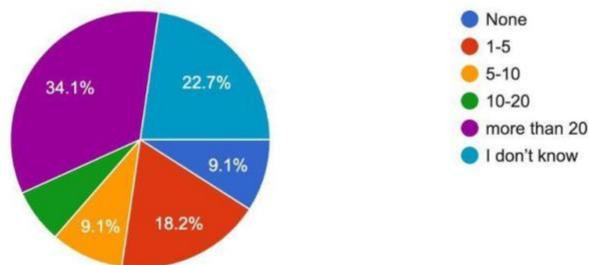How many positions that require language and/or linguistics skills do you currently have in your company (not counting external experts)?

Interim results of our survey

How many positions that require language and/or linguistics skills do you expect to open in the next 5 years (not counting external experts)?

Interim results of our survey

For which kinds of positions would you consider language and/or linguistics experts?

Most popular options:

1. Computational linguist/language engineer
2. Language specialist
3. Analytical/data linguist
4. Project manager/coordinator
5. Research associate

5

Interim results of our survey - **tasks**

What are the main tasks that language and/or linguistics experts might have in your company?

Most popular options:

1. Working with software and technological tools (developing, analysing, testing, etc.)
2. Working with data (annotating, analysing, collecting, transcribing, etc.)
3. Conducting research
4. Communicating with teams,clients and/or vendors
5. Managing projects
6. Evaluating processing
7. Writing reports

6

Interim results of our survey

Most desirable **skills** for employees working on language/linguistics tasks:

1. Problem solving skills (including independence and quick learning)
2. Communication skills (including interpersonal)
3. Analytical skills (including research)
4. Attention to detail
5. Organisational skills (including management)
6. Technical skills
7. Working under pressure
8. Creativity
9. Presentation skills

7

Interim results of our survey

Skills that language/linguistics experts seem to **need to improve** the most:

1. Problem solving skills (including independence and quick learning)
2. Technical skills
3. Organisational skills (including management)
4. Communication skills (including interpersonal)
5. Analytical skills (including research)
6. Attention to detail
7. Working under pressure
8. Creativity
9. Presentation skills

8

Interim results of our survey

Most **desirable knowledge** and experience for language/linguistics experts:

1. Knowledge of English and or other languages
2. Computational linguistics
3. Computer science (including programming)
4. Translation and/or localisation
5. Data analysis
6. Language technology tools (including CAT tools)
7. Project management
8. Linguistics
9. Terminology management

9

Interim results of our survey

Areas of **knowledge**/experience in **need of improvement**

1. Project management
2. Computer science (including programming)
3. Language technology tools (including CAT tools)
4. Computational linguistics
5. Data analysis
6. Terminology management
7. Translation and/or localisation
8. Linguistics
9. Knowledge of English and or other languages

10