

# Stakeholders survey

## Results

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## 1 Introduction

The Vereniging voor Podiumtechnologie (VPT) takes part in the European Union funded Essence project. The first part of the project the group is divided in 2 workgroups:

- Working group 1 will produce matrix of skills and competences taught in existing training programmes for sound specialists at EQF Level 5 (or, since they are largely non-existent, works in progress both at EQF5 and in the levels directly below and/or above), in a format compatible with the ESCO database, by partner country, and the methods to measure the learning outcome of said skills and competences. 5
- Working group 2 held a stakeholder survey in which stakeholders who are active in the market were asked what they think is important to be successful in the industry. In this document we will present the results of working group 2: the results of the surveys we've conducted during different periods.

## 2 Problem analysis

While trying to plug gaps in our national Vocational Education and training (VET) landscape at European Qualification Framework (EQF) levels 4 and 5, it became increasingly clear to us that a truly European scope would make our project better and more generally useful, and that much insight is to be gained from looking at other countries and their best practices in engineering and education.

5 Particularly so because sound engineering requires a complex mixture of STEM (science, technology, engineering and math), artistic, and inter-personal skills, which have proven time and again to be quite elusive to teach effectively, and some countries have already covered a lot of ground in this area. We want to provide new European career trajectories in sound for aspiring event engineers in an industry that is still very much relying on informal and self-learning. We intend to improve the quality of sound engineering education and ultimately deliver an even better experience for the event-going public and the artists performing for them.

## 10 3 Objective

The objective of our survey is two-fold. On one side the goal was to collect hard data from our respondents like which country they are coming from, or the previous education received. In another part of the survey we are asking what skill respondents have, and what they think are important skills to be successful in the industry. The goal is to generate as objective answers as possible.

## 4 Method

15 First off, we decided who are the stakeholders for our project. We identified three groups that we wanted to interview:

- sound technicians
- employers of sound technicians
- producers/creatives

20 In our surveys we chose to use a mix of open and closed questions. Some data like country of origin and area of operation are easy to ask in multiple choice questions. Other questions, for instance about skills are more difficult to ask through closed questions, as there are many skills and presenting them to the respondent in a dropdown menu introduces the risk that we steer the answers. Therefore we chose to ask these questions in an open manner, and score them afterwards into different types of skills. Each participating country was responsible for putting out the survey and making sure that there was a follow up in reactions. The survey was distributed over a course of 3 months (august '22 - october '22), and later another month to gain some more results.

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## 5 Results of the sound engineer survey

In this chapter we will present the questions of the surveys and the given answers. For some answers we have produced diagrams from the results:

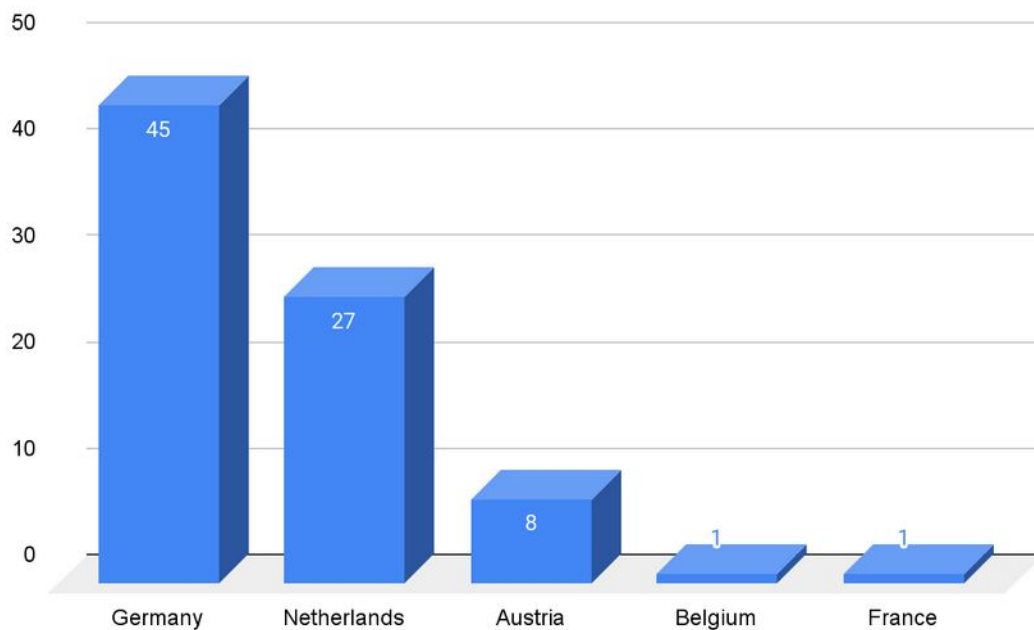
### 5.1 Background questions

#### 5.1.1 Can you tell us what professional training/education you have followed?

30 This is an open question as there are so many options to learn the job. There are simply too many options to learn the job. But we can draw some conclusions from the results. First off, we see that 19% of all respondents don't have an education in the field they are working in, and have acquired all skills in their professional life. See **Appendix A: Previous education of the respondents (sound engineers)** for the given answers.

### 5.1.2 Which country are you from?

First question of the survey is which country the respondent comes from. In total 82 people filled out the survey. Unfortunately, reactions from Belgium were on the low side. below a graphic which represents the absolute numbers of respondents.

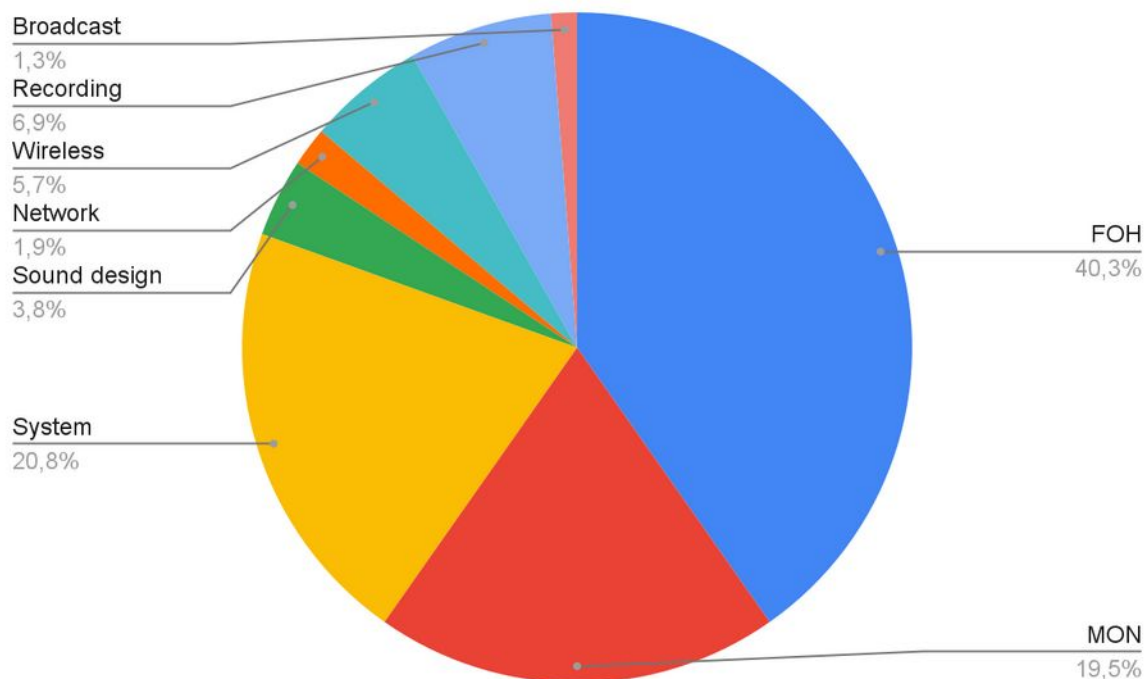


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## 5.2 Questions about occupation and mobility

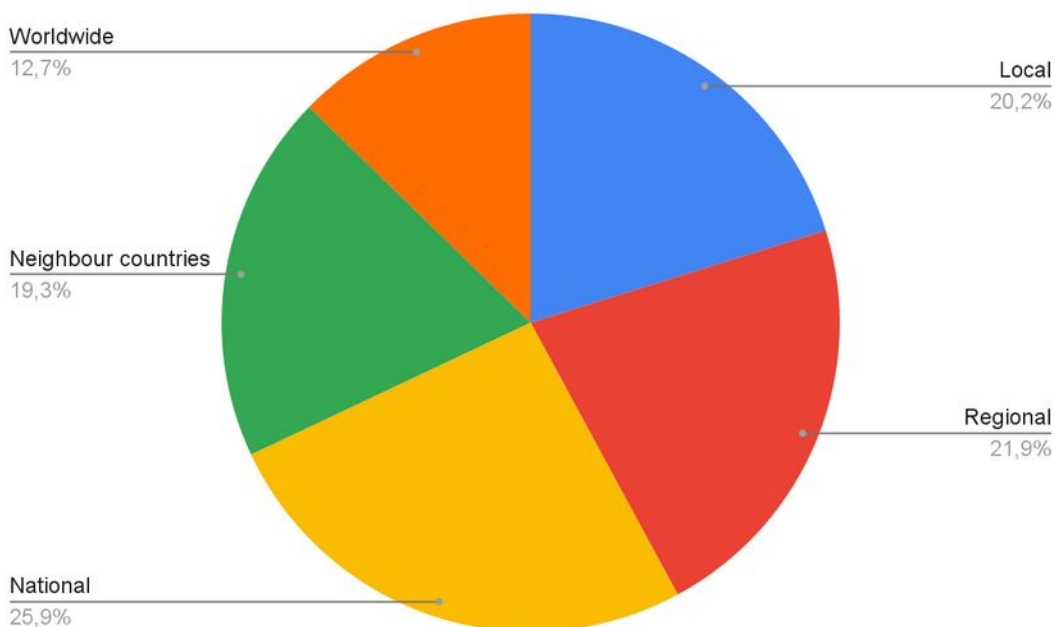
If we look at the answers given on this question, we see that almost all respondents are having multiple disciplines. To give some insight on what are the most given answers, we've put the percentages in a diagram.

### 5.2.1 What field(s) are you working in?



### 5.2.2 What is your working area?

Again, for this question there are more answers possible. In the graphic below you see the percentages.



## 5.3 Skills

In this section of the survey the respondents were asked to write down skills that they have and think are important to be a successful professional. The choice was made to present these questions as open questions. There are simply too many competences to put in a dropdownlist, plus we wanted to avoid the risk of steering the answers.

In skills we can make a diversion between hard skill and soft skills. A hard skill is knowledge that you can get through education or training, soft skills are “people skills”. These are more difficult to learn. in the graphic on the left you see the diversion between hard and soft skills as answered by the respondents. 5

In total the respondents identified 400 skills that are important in their opinion. To draw some conclusions of all the answers given, we identified 18 skills in which the answers can be organized. All open answers are scored and put in one of the categories below. This way it's possible to determine what skills are named the most and therefore most important for the whole group. 10

To present the answers in an orderly way, we have made a distribution within the hard skills and the soft skills. The subdivisions in skills are as follows:

### Hard skills

- Economics
- Technical skills (mixer setup)
- Technical skills (electronics) 15
- Technical skills (ict/network)
- Musical skills (mixing)
- Musical skills (playing/understanding Instrument/Score reading)
- Rigging
- Languages 20
- Driver's license
- Safety
- Engineering skills (System setup/tuning)

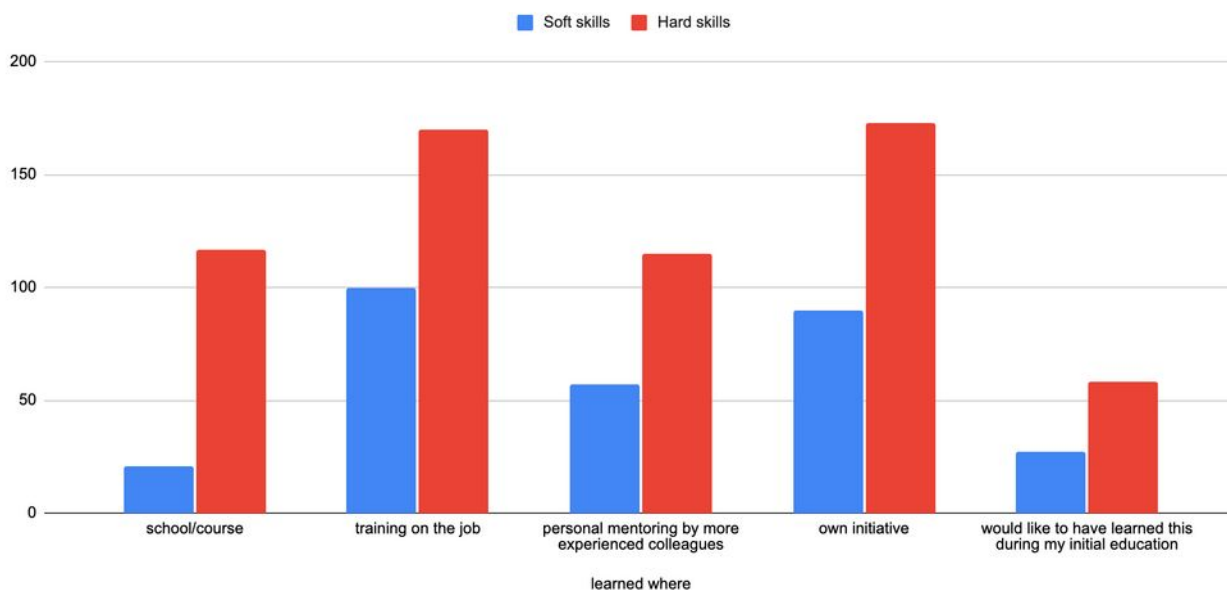
### Soft skills

- Communication 25
- Collaboration skills
- Flexibility
- Personal attitude
- Motivation
- Leadership 30
- Problem solving
- Time management/planning

When we put all the skills in one of the above categories, we get the result below in absolute numbers:

If we make a diversion between soft skills and hard skills en put it in a diagram, the following result:

### Soft skills en Hard skills

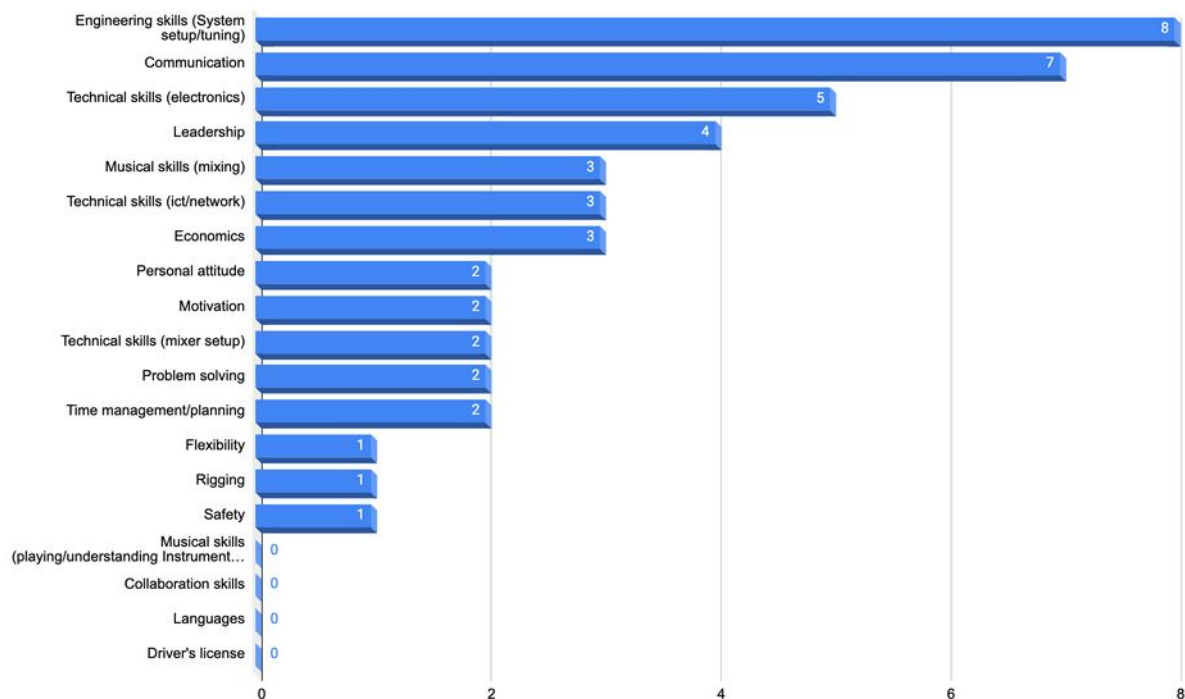


The conclusion that can be drawn from this diagram, is that in the opinion of respondents most skills are gathered during the professional career. The biggest difference between soft skill/hard skill is seen in the school/course column, which is no surprise as soft skills are harder to train in an education environment.

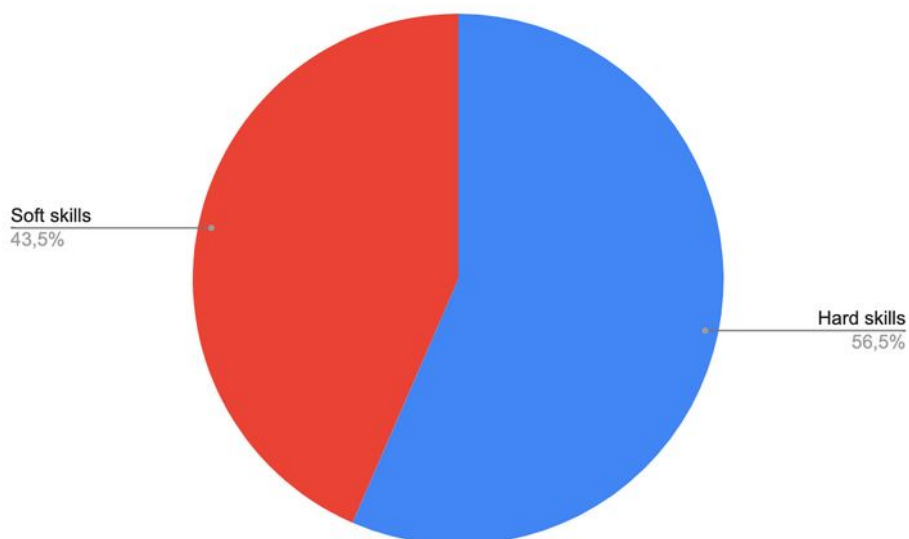
In **Appendix B: All skills lined up (sound engineers)**, we have lined up all answers given.



### 5.3.1 Name a few skills which you missed most when you finished your initial training and had to acquire over time on the job or through your own initiative.



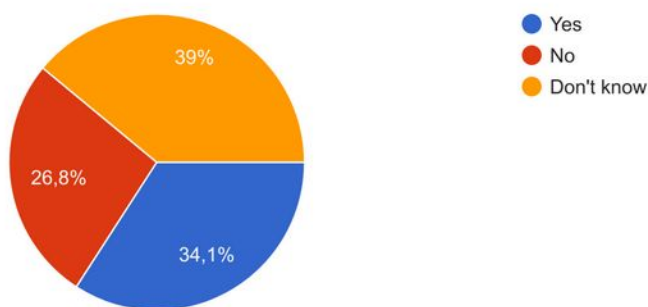
When you divide the answers to the above question into hard skills and soft skills, you'll see the following diagram.



### 5.3.2 Would a European Sound Specialist skills certificate (which would be recognized in different European countries) give you a direct advantage in your business?

Would a European Sound Specialist skills certificate (which would be recognized in different European countries) give you a direct advantage in your business?

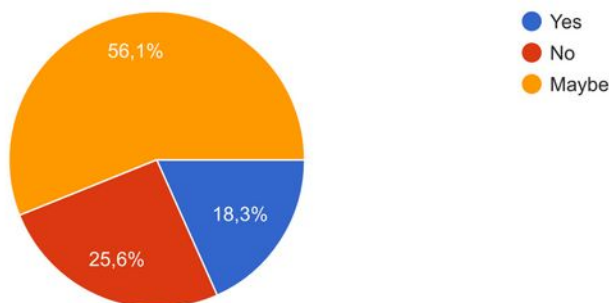
82 antwoorden



### 5.3.3 Would it open new work options to you that you might be interested in?

Would it open new work options to you that you might be interested in?

82 antwoorden



5

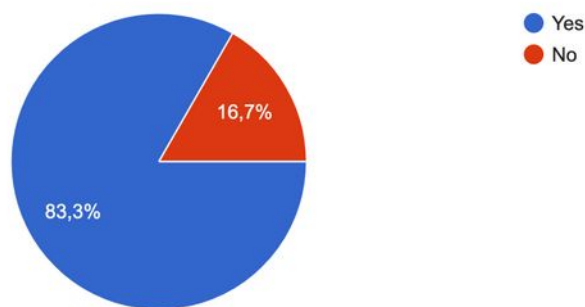
## 5.4 Involvement in the project

The last 2 questions of the survey were meant to involve more people in the project. It's good to see that the majority of the survey respondents are interested in being kept updated about the project, and almost as much would even like to contribute by reading of and commenting on the output of the project.

### 5.4.1 Are you willing to contribute to our project? For instance by reading documents and commenting on them?

Are you willing to contribute to our project. For instance by reading documents and commenting on them?

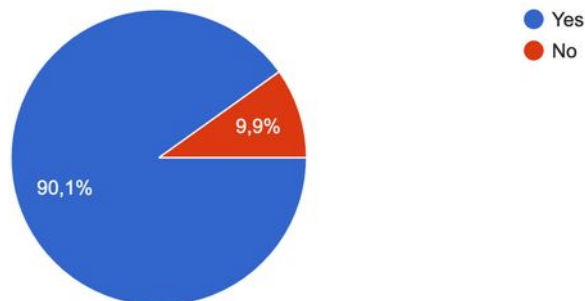
72 antwoorden



### 5.4.2 Would you like to get updates about the project?

Would you like to get updates about the project?

71 antwoorden



## 6 Results and conclusions sound engineers survey

There are some conclusions that can be drawn from this survey:

### 6.1 Diversity of background in education and the way of acquiring skills.

- 5 The survey shows clearly that engineers working in the industry have very different backgrounds in education and training. There are a lot of different routes to becoming a professional sound engineer. This makes it important to think about the target audience and what is needed to enter the training and how that is tested.

### 6.2 The advantage of a level 5 education

- 10 The respondents are not sure if a *European Sound Specialist skills certificate* will help them in their further career. Only 34% think that it will give them an advantage in their career. The rest don't think so or don't know. Even less (18,3%) thinks this will open new work options. This makes it even more important for the Essence project to clearly formulate and communicate the goals and advantages of the project for the intended candidates. Also, you can ask yourself if people can see the advantages of something that has yet to be invented.

- 15 The positive side is that most of the respondents are interested in the project and would like to be kept in the loop about the progress and are even willing to contribute to the project.

## 7 Results of the employer survey

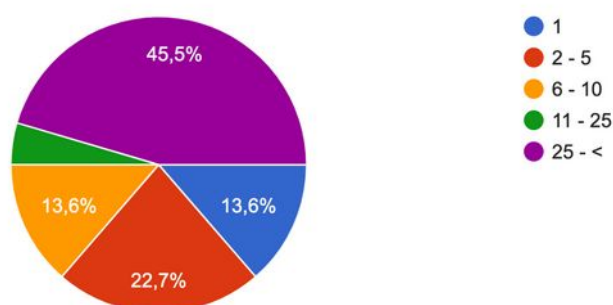
The survey for the employer was slightly different in setup than the sound engineers.

### 7.1 Background questions

#### 7.1.1 If you employ people, how many are on your payroll?

If you employ people, how much people are on the payroll of your organisation?

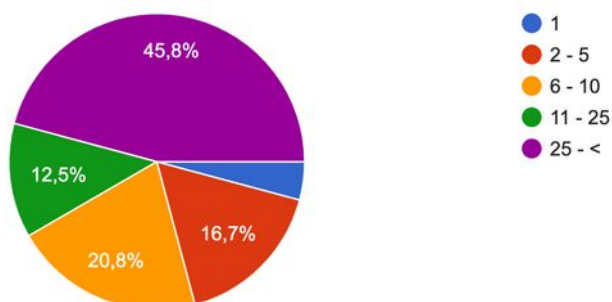
22 antwoorden



## 7.1.2 If you work with freelancers, how many are in your pool?

If you work with freelancers, can you give us an estimate on how many there are in your pool?

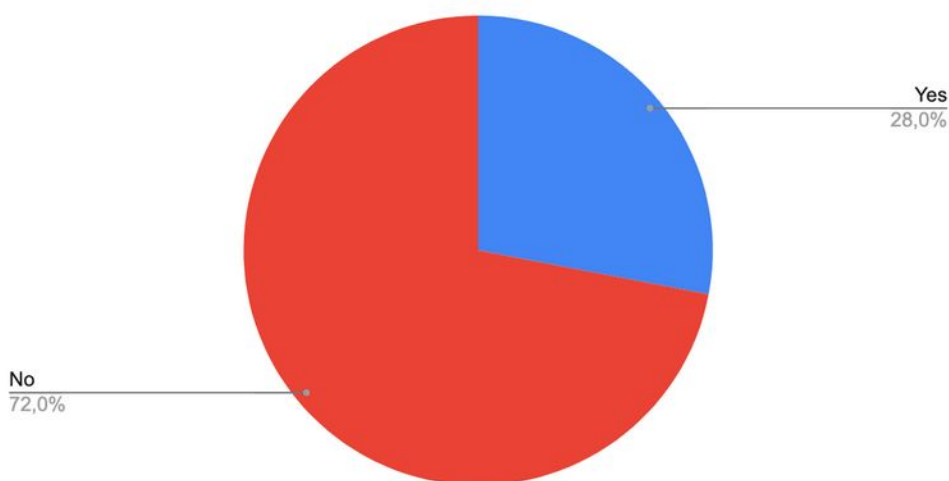
24 antwoorden



## 7.2 Certifications

### 7.2.1 Do you use diplomas or certificates as guidance for hiring decisions?

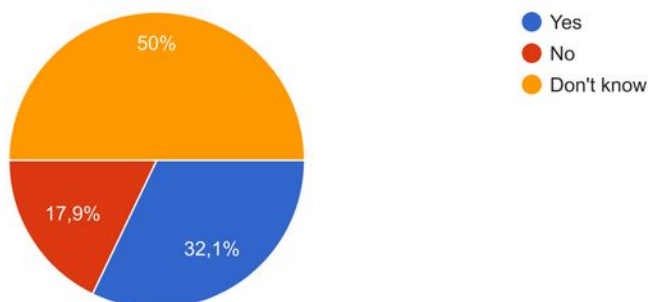
Do you use diploma's or certificates as guidance for hiring decisions?



## 7.2.2 Would a European Sound Specialist skills certificate give you a direct advantage?

Would a European Sound Specialist skills certificate (which would be recognized in different European countries) give you a direct advantage in your business?

28 antwoorden

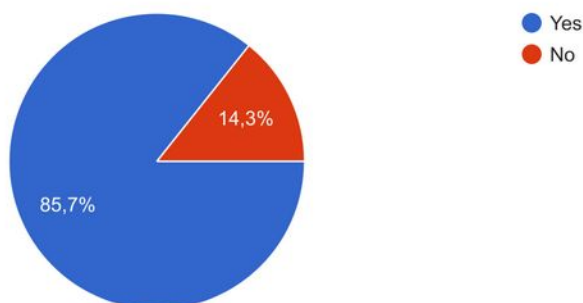


## 7.3 Involvement in the project

### 7.3.1 Are you willing to contribute to our project?

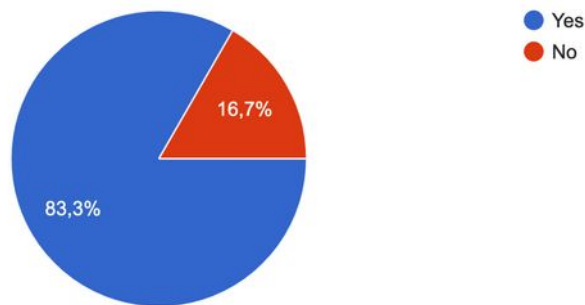
Are you willing to contribute to our project. For instance by reading documents and commenting on them?

28 antwoorden



### Would you like to get updates about the project?

24 antwoorden



## 8 Results and conclusions employer survey

### 8.1 The advantage of a level 5 education

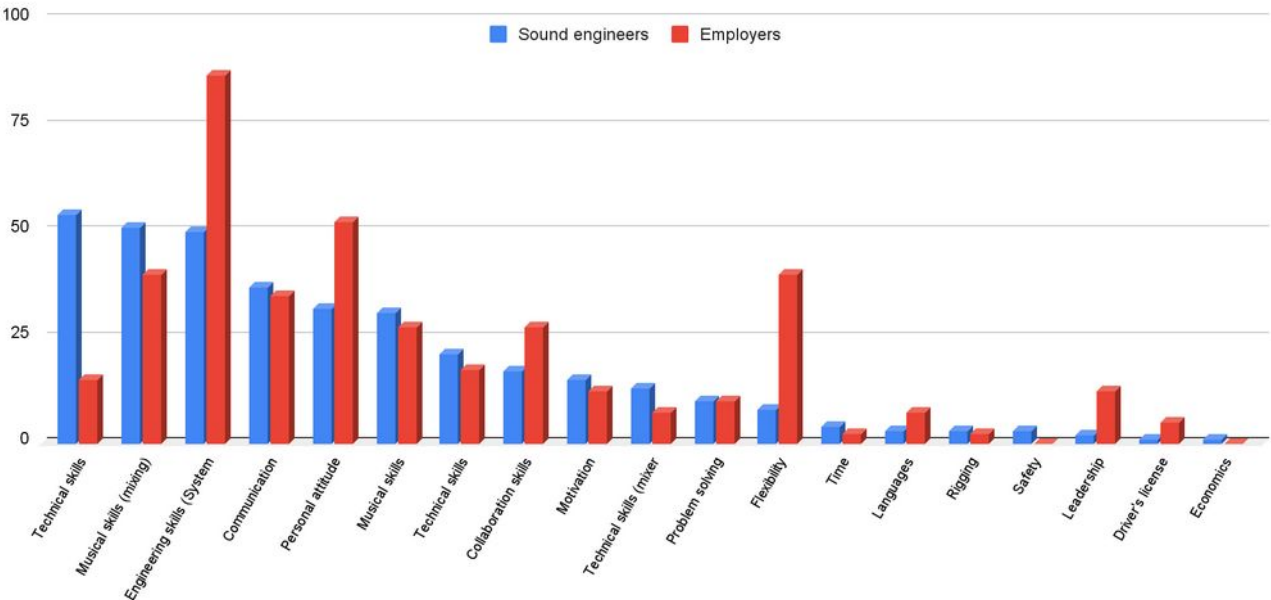
The respondents are not sure if a *European Sound Specialist skills certificate* will help to get an advantage over other companies. Only 30,8% think that it will give them an advantage in their business. The rest don't think so or don't know. This makes it even more important for the Essence project to clearly formulate and communicate the goals and advantages of the project for the intended candidates. Also, you can ask yourself if people can see the advantages of something that has yet to be invented.

The positive side is that most of the respondents are interested in the project and would like to be kept in the loop about the progress and are even willing to contribute to the project.

## 9 Skills - sound engineers in comparison with employers

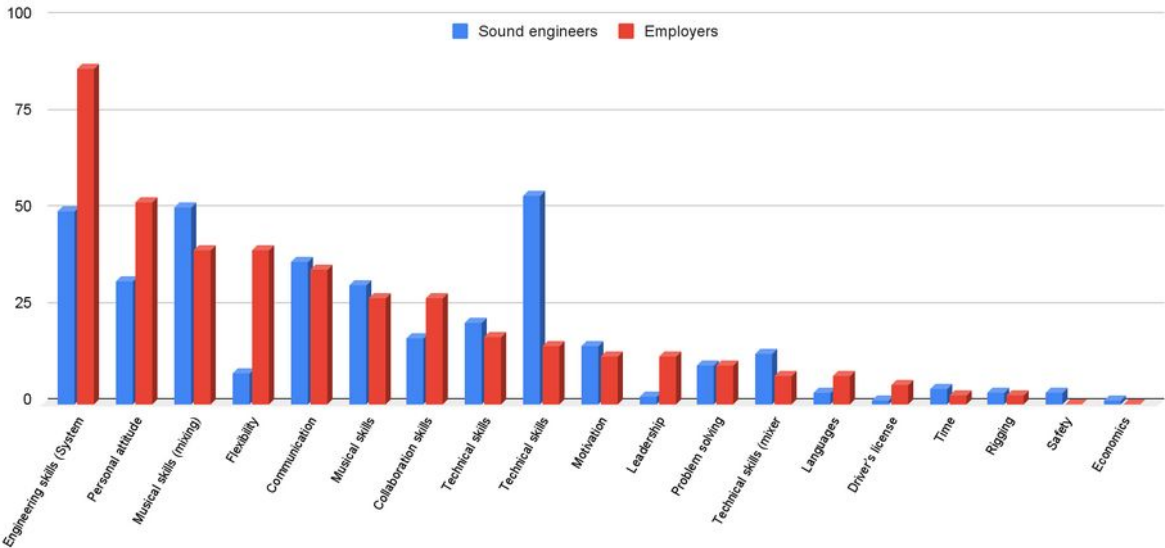
Ordered by importance according to sound engineers:

Sound engineers and Employers



5 Ordered by importance according to employers

Sound engineers and Employers





## 10 Conclusion when comparing the 2 groups:

Different groups of stakeholders have different interests in subtopics. It's a good idea to discuss what the differences mean for our project, f.i.:

- Engineering skills (System setup/tuning)
- Technical skills (electronics)
- Personal attitude
- Flexibility

5



## 11 Appendix A: Previous education of the respondents (sound engineers)

Education	Country
25 years Live Shows	Austria
Technical University	Austria
apprenticeship as event technician	Austria
Werkmeister der Veranstaltungstechnik, School of Audio Engineering	Austria
Tone-Art (private school for audio engineering, 6 month); Bachelor-study of Electronics/Business	Austria
Tone-Art Vienna, lots of Trainings	Austria
Learning by doing / 35 years practice / (university) teaching since 17 years	Austria
Not provided	Austria
Podiumtechnieken Rits Brussel	Belgium
I followed a first education program (Brevet de Technicien Supérieur) of 2 years for sound in Media. Then i made the 3rd year of a Bachelor and Master in the ISB university (Image et Son Brest) specialised in sound recordings and acoustics.	France
Dipl.-Ing. Elektrotechnik	Germany
event technology specialist	Germany
I studied Music for 5 years and did a diploma in Audio Engineering during Covid 19	Germany
18 months SAE "Audio Engineer", 25 years learning by doing almost exclusively live-shows. Last 2 years in addition: remixing recorded live-shows "itb" and live-streaming.	Germany
The Tonmeister program at UdK Berlin (diploma)	Germany
Sound engineer diploma SAE.	Germany
learning by doing/streeteducation	Germany
Acoustic studies at university	Germany
B.A.(hons) Sound technology	Germany
studied electrical engineering master degree	Germany
SAE Institute, Working Experience and a Bachelors-Degree from BHT Berlin in the field of Event-Engineering	Germany
Fachkraft für Veranstaltungstechnik, Meister für Veranstaltungstechnik	Germany
Autodidact	Germany
Apprenticeship	Germany
None. Self educated	Germany
Trainee as VT Fachkraft, studium as Mixer	Germany

SAE College FFM, Fachkraft für Veranstaltungstechnik IHK	Germany
Bachelor of Arts Audio Production (SAE), Fachkraft für Veranstaltungstechnik	Germany
Apprenticeship for "Radio electronics technician"; Bachelor Professional (CCI) of Events Technology Management and Operations; Expert for volume measurement (DIN 15905-5)	Germany
Not provided	Germany
Specialised in event technology (Apprenticeship) but learned more than 95% of my profession afterwards on the road	Germany
SAE Audio engineer	Germany
Institute of Music and Media Düsseldorf	Germany
Fachkraft für Veranstaltungstechnik	Germany
SAE Audio Engineer and state-recognized training as a media designer (sound + video)	Germany
Work in the field	Germany
SAE	Germany
german master degree in electrotechnical engineering, specifically communication and transmission	Germany
specialist for event engineering	Germany
Event Technician	Germany
professional working since 1991, No Education - There was none	Germany
Non	Germany
30+ years live sound experience as technician and engineer in any kind of live events and any kind of position. additionally I am holding an engineers degree/diploma in mediatechnologies. what you probably may not expect is the basics of the job: science of nature and psychology! any questions?	Germany
Apprenticeship	Germany
self learning	Germany
Apprenticeship in event technology	Germany
Not provided	Germany
Meister für Veranstaltungstechnik	Germany
Internship - Abitur with Tec Focus - Study of Electronic Engineering - Work in R&D for Mixing Console Manufacturer + Online Courses (SAE/SMPTE, edX.org and manufacturer seminars	Germany
SAE audio engineer	Germany
3 Years german training as an Event Technician (Fachkraft für Veranstaltungstechnik)	Germany
Not provided	Germany
SAE School for Audio Engineering	Netherlands
4 years of technical event production at Grafisch Lyceum Rotterdam	Netherlands
Royal Conservatory The Hague/Dutch national broadcast	Netherlands
Audiovisueel medewerker (mbo3)	Netherlands

SoundSeminar Rotterdam. HvA PDG	Netherlands
Bachelor of Theatre (Theatre Technology), Master of Arts (Crossover Creativity), miscellaneous training and courses	Netherlands
Muziekregistratie @ Koninklijk Conservatorium The Hague	Netherlands
Audiovisual Technics	Netherlands
Muziekregistratie - Conservatorium	Netherlands
HBO Logistics&economics, Educational degree, Master in test&exam	Netherlands
Business management	Netherlands
Conservatory Rotterdam. Jazz department: electronics	Netherlands
None	Netherlands
Koninklijk Conservatorium Muziekregistratie Bachelor Studioregistratie	Netherlands
Mostly trainings from manufacturers, some courses by educators	Netherlands
Rockacademie tilburg	Netherlands
Autodidact - Live Sound Education	Netherlands
MBO Electronics	Netherlands
Practice	Netherlands
B.Eng.	Netherlands
In the field	Netherlands
Not provided	Netherlands
MBO 4	Netherlands
university physics	Netherlands
SAE	Netherlands

## 12 Appendix B: All skills lined up (sound engineers)

Below all answers to the skills questions are lined up and sorted by the type of skill

Economics			
solid financial skills			
Technical skills (mixer setup)			
Monitors	training on the job		
technical knowledge	school/course	training on the job	personal mentoring by more experienced colleagues
Knowledge how to use the most utilized gear in the market	training on the job	own initiative	would like to have learned this during my initial education
Knowing how the basics work (cable, mics etc)	school/course	training on the job	personal mentoring by more experienced colleagues
be quick on technical understanding and solutions	school/course	training on the job	personal mentoring by more experienced colleagues
know your equipment	school/course	training on the job	personal mentoring by more experienced colleagues
Technical understanding, knowing consoles and common loudspeaker systems	training on the job	own initiative	
Technical skills for the special task	training on the job	own initiative	would like to have learned this during my initial education
setup a desk and a show	training on the job	own initiative	
Stage	training on the job		
How to put together material suitable for work	personal mentoring by more experienced colleagues		
interpretation of Diagrams and Monitoring Devices,			
theory and practice in all the gear we are using. it is as complex as space ship technologies. just most people can not understand, see, touch, what we are doing.	school/course	training on the job	personal mentoring by more experienced colleagues
Common practices for setting up a system for others to use	training on the job	personal mentoring	own initiative

		by more experienced colleagues	
physical of technical mechanichs	school/course	training on the job	personal mentoring by more experienced colleagues
Technical skills (electronics)			
Technical Skills	training on the job		
Understanding basic electronics	school/course	training on the job	own initiative
Technically understanding	training on the job		
Knowledge about electrical power	school/course	training on the job	
technical knowledge (electronic)	school/course	training on the job	
Full Understanding of Signal-Flows and how the signals are transmitted on an electrical level	school/course	personal mentoring by more experienced colleagues	own initiative
Basic electrical skills, i.e. calculating power requirements	school/course		
Understanding physics	training on the job	personal mentoring by more experienced colleagues	own initiative
Signal flow	school/course	training on the job	personal mentoring by more experienced colleagues
Understanding Signalflow	school/course		
basic technical knowledge	school/course	training on the job	
Know everything about physics of sound and sound waves	training on the job	personal mentoring by more experienced colleagues	own initiative
digital signal processing	school/course	training on the job	personal mentoring by more experienced colleagues
Technical knowledge	school/course	training on the job	personal mentoring by more experienced colleagues
Technical knowledge of equipment	school/course	training on the job	personal mentoring by more experienced colleagues
Basic knowledge	school/course	training on the job	
technical understanding	school/course	training on the job	

Signalflow	school/course	training on the job	personal mentoring by more experienced colleagues
Audio stuff	personal mentoring by more experienced colleagues	own initiative	
basic knowledge of LF electronics and Accoustic, social contacts	school/course	training on the job	personal mentoring by more experienced colleagues
technician	training on the job	own initiative	
should know the signalflow and find mistakes	school/course	training on the job	personal mentoring by more experienced colleagues
electrical / electronical engineering basics	school/course		
signal flow	school/course	training on the job	own initiative
physics (mainly acoustics, electronics)	school/course		
RF Transmitter techniques	training on the job	would like to have learned this during my initial education	
Technical knowledge	training on the job	personal mentoring by more experienced colleagues	own initiative
signal flow	training on the job	personal mentoring by more experienced colleagues	own initiative
profound knowledge of signal flow	school/course	training on the job	personal mentoring by more experienced colleagues
Basic technical understanding of wireless, electricity	school/course		
Knowledge of different systems	school/course	training on the job	personal mentoring by more experienced colleagues
Basics in equipment knowledge	training on the job	personal mentoring by more experienced colleagues	own initiative
Signal flow	school/course	own initiative	
Signal flow (analogue and digital)	school/course	training on the job	own initiative
Tools (devices, consoles, effects, signal flow,.....)	school/course	training on the job	personal mentoring



			by more experienced colleagues
Signal flow management, i.e. analog vs. digital distribution, cable requirements etc	training on the job	personal mentoring by more experienced colleagues	own initiative
Technical understanding Elektro/ Audio-Physics	school/course	training on the job	personal mentoring by more experienced colleagues
Being capable in knowing basic facts (I am able to send a special "Quiz" for that)	own initiative		
Technical skill	school/course	training on the job	personal mentoring by more experienced colleagues
Understanding gainstructure	training on the job	personal mentoring by more experienced colleagues	would like to have learned this during my initial education
Acoustics (Elektro-, psychoacoustics)	school/course	training on the job	own initiative
Technical engineering skills	own initiative		
electrical engineering skills	school/course	training on the job	
Theory of the sound components	school/course	training on the job	personal mentoring by more experienced colleagues
Technical/Gear Knowledge	training on the job	personal mentoring by more experienced colleagues	own initiative
Technical understanding	training on the job	own initiative	
Technical skills	school/course	training on the job	personal mentoring by more experienced colleagues
Measuring	school/course		
Equipment knowledge	training on the job	personal mentoring by more experienced colleagues	own initiative
audio equipment skills	school/course	training on the job	personal mentoring by more experienced colleagues
Technical knowledge (electronics, physics)	school/course	training on the job	personal mentoring by more experienced

			colleagues
analog electrotechnical basics	school/course	training on the job	personal mentoring by more experienced colleagues
basic understanding of technical gear	school/course	training on the job	personal mentoring by more experienced colleagues
learn about sound equipment.	school/course	training on the job	personal mentoring by more experienced colleagues
basic knowledge of electric signals: impedance, current, Voltage, logarithmic vlaues, understanding of the most used technical data in audio (THD, Watt Rms, Noise, etc)	school/course	own initiative	
Technical skills (ict/network)			
Understanding of digital workflows	school/course	training on the job	personal mentoring by more experienced colleagues
network skills (amps,wireless)	school/course	training on the job	personal mentoring by more experienced colleagues
Fundamental Understanding and Use of Networks, especially Audio/Video over IP	school/course	personal mentoring by more experienced colleagues	own initiative
Audio over network	training on the job	personal mentoring by more experienced colleagues	own initiative
basic understanding of network	school/course	training on the job	personal mentoring by more experienced colleagues
Setting up RF systems	own initiative	would like to have learned this during my initial education	
Network skills	training on the job	personal mentoring by more experienced colleagues	own initiative
how does a Audio Network Analog and Digital work	training on the job	own initiative	
RF Knowledge	school/course	training on the job	personal mentoring by more experienced colleagues

Network Basics	own initiative		
Understanding (radio) frequencies	own initiative	would like to have learned this during my initial education	
Wireless Mics and InEar Systems	own initiative	would like to have learned this during my initial education	
IT knowledge is a must nowadays	training on the job	own initiative	would like to have learned this during my initial education
Intercom systems, making an inventory who needs to communicate with who during an event and designing a system that works for the event	own initiative	would like to have learned this during my initial education	
Digital network	training on the job	own initiative	would like to have learned this during my initial education
Network	own initiative	would like to have learned this during my initial education	
Network/ Sound Network	training on the job	own initiative	would like to have learned this during my initial education
basic knowledge about IT	training on the job	own initiative	would like to have learned this during my initial education
Digital Audio Basics (at least comparable to Dante Level 1)	training on the job	personal mentoring by more experienced colleagues	own initiative
Making Q-Lab lists	own initiative	would like to have learned this during my initial education	
Setting up IP networks for audio (Dante), monitoring and (remote) control of equipment	own initiative	would like to have learned this during my initial education	
Musical skills (mixing)			
Ears not Plug ins	own initiative		
Aural ability to detect frequencies	school/course	training on the job	own initiative
listening skill	training on the job	own initiative	would like to have learned this during

			my initial education
good hearing and a vision of good sound	training on the job	personal mentoring by more experienced colleagues	own initiative
Doing Sound	training on the job	personal mentoring by more experienced colleagues	own initiative
frequency hearing, for flatten eqs in a musical way	training on the job		
Analytical Hearing	training on the job	own initiative	would like to have learned this during my initial education
Mixing Bands	school/course	training on the job	own initiative
sufficient hearing	training on the job	personal mentoring by more experienced colleagues	own initiative
Being accurate in the use of EQ and compressors	own initiative		
listen	training on the job	own initiative	
analytical hearing	school/course	training on the job	personal mentoring by more experienced colleagues
Front of House	training on the job	own initiative	
Using my ears	training on the job	personal mentoring by more experienced colleagues	own initiative
musical ears	training on the job	own initiative	
Sound	personal mentoring by more experienced colleagues		
Foh	training on the job		
Ability to foresee the desired result: how a recording should sound/ how a mix should sound	school/course	training on the job	own initiative
Good hearing	school/course	training on the job	personal mentoring by more experienced colleagues
Doing Monitor Sound - developing stage setups	training on the job	own initiative	
Understand Gain Staging and why sufficient levels are always important.	training on the job	personal mentoring by more experienced colleagues	own initiative

Use your ears	training on the job	own initiative	
Mixing Speech	training on the job	own initiative	
Ability to hear	personal mentoring by more experienced colleagues		
Mix a Band	training on the job	own initiative	
selective hearing	training on the job	own initiative	
Good set of ears			
Ears	training on the job	personal mentoring by more experienced colleagues	
Mixing sound for FOH an Monitors	school/course	personal mentoring by more experienced colleagues	
Mixing	personal mentoring by more experienced colleagues	own initiative	
recording	training on the job	personal mentoring by more experienced colleagues	
proficiency with mixer and other equipment to the point where the mind no longer occupied with it	training on the job		
Feeling the Venue and Audience to set the volume	training on the job	personal mentoring by more experienced colleagues	
learning to listen, art of mixing	school/course	training on the job	personal mentoring by more experienced colleagues
Mixing Classical Music	school/course	training on the job	own initiative
know all the basics	school/course	training on the job	own initiative
Mixing	school/course	training on the job	
understanding of psychoacoustic and hearing,			
Feedback Avoidance	school/course	training on the job	personal mentoring by more experienced colleagues
Mixing Monitor	school/course	training on the job	personal mentoring by more experienced colleagues

Basic radio microphone skills	training on the job	would like to have learned this during my initial education	
basics like how to handle flight cases and cables, classical sound technicians education: the human voice, music instruments, microphony, mixing, sound reinforcement, different requirements for live sound mixing for public adress, monitoring, broadcasting, recording!	training on the job	personal mentoring by more experienced colleagues	own initiative
Micing (Headsets and Instruments)	school/course	training on the job	personal mentoring by more experienced colleagues
audio	training on the job	personal mentoring by more experienced colleagues	own initiative
Basic Monitoring	training on the job	personal mentoring by more experienced colleagues	own initiative
learn about how sound can be treated	school/course	training on the job	personal mentoring by more experienced colleagues
knowledge of 15 most used microphones by name and look	training on the job	own initiative	
Lavalier and frequency management	training on the job	personal mentoring by more experienced colleagues	would like to have learned this during my initial education
Know how to be responsible in terms of soundlevel and the dangers of In-Ear monitoring	personal mentoring by more experienced colleagues	own initiative	would like to have learned this during my initial education
To get the best quality, work on the source!	training on the job		
Beeing able to establish a propriate mix in a quick way ("every signal needs it's separate frequency room")	own initiative		
Musical skills (playing/understanding Instrument/Score reading)			
Understanding how music works	school/course	own initiative	
Score reading	own initiative	would like to have learned this during my initial education	
basic musical education	school/course	own initiative	
musical understanding,	training on the job	personal mentoring by more experienced colleagues	own initiative

Musical Knowledge	training on the job	own initiative	
Background in music	training on the job	personal mentoring by more experienced colleagues	own initiative
music knowledge	school/course	training on the job	personal mentoring by more experienced colleagues
Musical Skills	school/course		
frequency ranges of instruments and voices	school/course	training on the job	own initiative
music theory	school/course	training on the job	own initiative
Musically hearing and transcrip music	school/course	own initiative	
Musical background	training on the job	personal mentoring by more experienced colleagues	own initiative
Fine grasp on music	training on the job	personal mentoring by more experienced colleagues	
Schooled hearing	training on the job		
Musicality	school/course	personal mentoring by more experienced colleagues	own initiative
Musical instrument	school/course		
Rhythmic feeling	own initiative	would like to have learned this during my initial education	
Music theorie/ knowledge about instruments	school/course	training on the job	personal mentoring by more experienced colleagues
technical and musical understanding and combining these two.	school/course	training on the job	personal mentoring by more experienced colleagues
mic basics and micing techniques	school/course	training on the job	personal mentoring by more experienced colleagues
Basics in musical Instruments and theory	school/course	training on the job	personal mentoring by more experienced colleagues
For Musicbusiness: own experience as musician on stage	training on the job	own initiative	

Knowledge of musical instrument and composition	own initiative	would like to have learned this during my initial education	
Musicianship	school/course	own initiative	
Musical understanding	training on the job	personal mentoring by more experienced colleagues	own initiative
Playing a lot of instruments, knowing them and know how to mic them and how the players would have them to sound.	training on the job	own initiative	
Musicality	school/course	own initiative	
Orchestral Mixing	training on the job	personal mentoring by more experienced colleagues	
Sound knowledge from the source. So know how the most common instruments work to learn how to mic and mix them. This also counts for voices.	personal mentoring by more experienced colleagues	own initiative	would like to have learned this during my initial education
knowledge of music for better communication with artists	school/course	training on the job	personal mentoring by more experienced colleagues
Instrument Characteristics and Voice			
musical understanding	school/course	training on the job	own initiative
Train your ears. It is important to identify certain Frequencies just by using your ears. It makes you very quick.	training on the job	personal mentoring by more experienced colleagues	own initiative
training in Hearing and listening	school/course	training on the job	personal mentoring by more experienced colleagues
Rigging			
Rigging	school/course	training on the job	
PA Rigging	training on the job	personal mentoring by more experienced colleagues	own initiative
Rigging sound & light	training on the job	own initiative	would like to have learned this during my initial education
Languages			
Languages	school/course	training on the job	own initiative
english language	school/course		



learning several languages	school/course		
Driver's license			
Driving Trucks	school/course		
Safety			
Lifting equipment	training on the job	would like to have learned this during my initial education	
Health and safety, i.e. rigging safety and spl protection	school/course	training on the job	personal mentoring by more experienced colleagues
Sense of responsibility / safety	training on the job		
Engineering skills (System setup/tuning)			
elements of acoustic engineering	school/course	training on the job	personal mentoring by more experienced colleagues
Should know the equipment and how to use it	school/course	training on the job	personal mentoring by more experienced colleagues
Understanding the signal flow	school/course	training on the job	own initiative
Understanding Analogue and Digital Signal Flow and processing	school/course	training on the job	own initiative
50% of the Job is getting the system working	training on the job	personal mentoring by more experienced colleagues	own initiative
Good System Engineer	training on the job	personal mentoring by more experienced colleagues	
Being quick in translating requirements to the technical setup	school/course	training on the job	personal mentoring by more experienced colleagues
Theory room acoustics	school/course		
set up a good in time phase soundsystem	training on the job	personal mentoring by more experienced colleagues	
Using measurement software	school/course	training on the job	personal mentoring by more experienced colleagues
Understanding how soundwaves move	school/course	personal mentoring by more experienced	own initiative

		colleagues	
Physical theory of Sound	school/course	training on the job	
Air-Physics	school/course	training on the job	personal mentoring by more experienced colleagues
theory physics of sound	school/course		
Sound System physics	school/course	training on the job	personal mentoring by more experienced colleagues
Understanding Polar patterns/directivity	school/course	training on the job	personal mentoring by more experienced colleagues
Knowing how sound works	school/course	training on the job	personal mentoring by more experienced colleagues
Sounddesign	training on the job	own initiative	
System engineer	training on the job		
audio engineering	school/course	training on the job	
Understanding System Technology and their Interdependence (how to connect a stage box to a console, Dante Patching etc.)	training on the job	personal mentoring by more experienced colleagues	own initiative
acoustics	school/course	own initiative	would like to have learned this during my initial education
Understanding of acoustics	school/course		
System Tech	school/course	training on the job	personal mentoring by more experienced colleagues
acoustics (physics)	school/course	training on the job	
Physik Basics	own initiative		
PA Setup	school/course	training on the job	personal mentoring by more experienced colleagues
acoustics of sound sources	school/course	personal mentoring by more experienced colleagues	
System Design	training on the job	own initiative	

Systems	school/course	training on the job	
room acoustics	school/course	training on the job	would like to have learned this during my initial education
Basic sound knowledge. About placing speakers/microphones and acoustics. Also to learn that theory and practical don't always meet.	training on the job	personal mentoring by more experienced colleagues	
system design (how to decide what to use for the job))	training on the job	personal mentoring by more experienced colleagues	own initiative
Good understanding of Room Acoustics, and why they are the most important factor to work with in Live-Sound	training on the job	own initiative	would like to have learned this during my initial education
Systemtuning	training on the job	personal mentoring by more experienced colleagues	own initiative
Basic acoustic knowledge; how do rooms influence sound	school/course	training on the job	personal mentoring by more experienced colleagues
Knowledge in Acoustics	school/course	personal mentoring by more experienced colleagues	own initiative
understanding of physics, electronics, acoustics	school/course	own initiative	would like to have learned this during my initial education
Set up a system with appropriate reference level for all following signals for a soundcheck	own initiative		
room acoustics	school/course		
A musical understanding of sound and conveying music	training on the job	personal mentoring by more experienced colleagues	would like to have learned this during my initial education
Setting up and tuning large sound systems	training on the job	personal mentoring by more experienced colleagues	own initiative
System Engineering	training on the job	own initiative	
Pre-production	own initiative	would like to have learned this during my initial education	
Array Calculation	school/course	personal mentoring	would like to have

		by more experienced colleagues	learned this during my initial education
knowledge of acoustics in the hall, wavelength, standing wave	school/course	own initiative	
deep understanding of psycho acoustical phenomena, and how to handle everything to reach the best result possible.	own initiative	would like to have learned this during my initial education	
good mixing skills	own initiative		
psycho-acoustics of man	school/course	training on the job	personal mentoring by more experienced colleagues
Being capable in a setup, which is physically structured for being self-explained for colleagues	own initiative		
Reading/producing technical drawings	own initiative	would like to have learned this during my initial education	
Technical standards (e.g. Volume levels for Streaming etc.)	personal mentoring by more experienced colleagues	own initiative	
good loudspeaker selection and placement skills	own initiative		
Understanding what a "acoustical room answer" means and appropriate reaction with a dynamic EQ	own initiative		
System design and tuning	personal mentoring by more experienced colleagues	own initiative	
Communication			
Communication is everything required to the situation	training on the job	personal mentoring by more experienced colleagues	
Communication	school/course	training on the job	personal mentoring by more experienced colleagues
Communication	own initiative		
Communication & people skills	own initiative		
Communication and Listening to what is needed	training on the job	personal mentoring by more experienced colleagues	would like to have learned this during my initial education
Communication skills	school/course	training on the job	
Communication with the Artist	own initiative		

social skills			
Communication skills	training on the job	personal mentoring by more experienced colleagues	
psychology of audience, producers, artists	training on the job	own initiative	
being capable in communication with actors (I offer : special comms skills !)	own initiative		
social competence	training on the job	personal mentoring by more experienced colleagues	
Basic communication skills	school/course	personal mentoring by more experienced colleagues	
social skills	school/course	training on the job	personal mentoring by more experienced colleagues
Social Skills	own initiative		
know what is important when working with different types of clients	training on the job		
The skill to communicate on a personal level and make the technical translation for yourself.	personal mentoring by more experienced colleagues	own initiative	
Understanding Musicians wishes	training on the job	personal mentoring by more experienced colleagues	
Communication	school/course	training on the job	personal mentoring by more experienced colleagues
social competence	school/course	training on the job	own initiative
Understanding what the artist want	training on the job	personal mentoring by more experienced colleagues	own initiative
good communication skills with artist/talent/client	personal mentoring by more experienced colleagues		
Negotiating	own initiative	would like to have learned this during my initial education	
Psychological skills when working with artists/musicians	school/course	training on the job	personal mentoring

			by more experienced colleagues
communication is everything	training on the job	personal mentoring by more experienced colleagues	own initiative
Understand Musicians, they don't tell you i don't like how the guitar sound at 2k	training on the job	own initiative	
being nice to people	training on the job	own initiative	would like to have learned this during my initial education
working and vocabulary with bands, directors etc.	training on the job	personal mentoring by more experienced colleagues	own initiative
empathy towards artists / respect the artist(s)	training on the job	own initiative	would like to have learned this during my initial education
humility, ability to serve	own initiative		
Social skills	training on the job		
Social Skills	training on the job	own initiative	
good apprehension	school/course	training on the job	own initiative
be a nice and pleasant person / be professional	training on the job	own initiative	
Being capable mounting wireless mics while communicate with actors in a appropriate way	own initiative		
Communication	training on the job	personal mentoring by more experienced colleagues	would like to have learned this during my initial education
Good communication skill / translating between art and tech	school/course	training on the job	personal mentoring by more experienced colleagues
Communication with Artists	training on the job		
Good Communication	training on the job	own initiative	
Helping artists and other people with mics and in-ears prior to going on stage; working in their intimate zone	personal mentoring by more experienced colleagues	own initiative	would like to have learned this during my initial education
Understand that you're helping the artist on stage in stead of yourself or your gear.	personal mentoring by more experienced colleagues	own initiative	would like to have learned this during my initial education
Service-based Customer Communication	training on the job	own initiative	

Understanding customers needs and beeing able to communicate in an appropriate way (for easy solutoin findings)	own initiative		
Collaboration skills			
Customer oriented	own initiative		
People skills	own initiative		
service providing, problems solving, always kind and focused to the target, stress resistant	training on the job	personal mentoring by more experienced colleagues	would like to have learned this during my initial education
people skills	training on the job	personal mentoring by more experienced colleagues	own initiative
focus on the stage	training on the job		
harmonious connections	training on the job		
Being á nice Person and teamplayer on tour	training on the job	personal mentoring by more experienced colleagues	
logical approaches	training on the job	personal mentoring by more experienced colleagues	
Teamwork	training on the job		
People skills	training on the job	would like to have learned this during my initial education	
should be able to work in a team	training on the job	personal mentoring by more experienced colleagues	own initiative
Putting Productions together	training on the job	personal mentoring by more experienced colleagues	own initiative
capability of working in a Team	training on the job		
Knowing how to work together within sound department	training on the job	personal mentoring by more experienced colleagues	own initiative
Knowing how to work with other departments	training on the job	personal mentoring by more experienced colleagues	own initiative
Everyting together	own initiative		
good team member and team leading skills	training on the job		

Diplomacy	school/course	training on the job	personal mentoring by more experienced colleagues
social skill "see yourself as a service provider" in the first place			
Knowing how to work with people (artists/actors/guests)	training on the job	personal mentoring by more experienced colleagues	own initiative
respect for and solidarity with colleagues (also from other disciplines)	training on the job		
Being polite and understand the stress artist have on and before the go on stage.	training on the job		
Know what is your position in a full event. Work together with the different disciplines.	training on the job	personal mentoring by more experienced colleagues	would like to have learned this during my initial education
Flexibility			
Adaptation to different circumstances	training on the job		
Being flexible	training on the job	own initiative	would like to have learned this during my initial education
Patience	school/course	training on the job	personal mentoring by more experienced colleagues
doing live sound is something completely different than studio recording and mixing. not only the target to start a show just in time, but also all the live events that occur on live events. and of course to know about, understand and handle them in advance or during the event. simple example: not mixing in stereo for home hifi. but for hundreds or thousands of people in a broad venue, while atmospheric conditions are changing, what influences the sound massively, while every single person on each individual place shall everytime get the best auditive experience possible.	training on the job	personal mentoring by more experienced colleagues	own initiative
working under pressure	training on the job		
light	school/course	training on the job	personal mentoring by more experienced colleagues
Flexibility			
Being able to adapt to fast changing circumstances	training on the job		
Stress resilience because I have a sound concept I can reproduce in minutes everywhere	training on the job	own initiative	



Stress resistance	training on the job		
be prepared	training on the job	own initiative	
combining all those skills. staying stress resistant. survive, have fun, and like what you do.	training on the job	own initiative	
Personal attitude			
being friendly	training on the job	personal mentoring by more experienced colleagues	own initiative
Friendlyness	school/course	training on the job	
Don't be a dick	own initiative		
Critical listening	own initiative	would like to have learned this during my initial education	
Being thorough	training on the job	personal mentoring by more experienced colleagues	
Patience	own initiative		
Reliability	training on the job	own initiative	
Nice Friendly	own initiative		
people skills, social skills, communication skills, emotional intelligence, and personality traits that make it easy to get along and work harmoniously with other people. being flexible in complex heterogen changing structures of productions and organisations.	training on the job	personal mentoring by more experienced colleagues	would like to have learned this during my initial education
Self-reflect	personal mentoring by more experienced colleagues	own initiative	
calmness			
Kindness	school/course	training on the job	own initiative
Also very important autodidactic	own initiative		
Spontaneously	training on the job		
Be a service provider,	training on the job	personal mentoring by more experienced colleagues	own initiative
ability to concentrate	training on the job	own initiative	
Creativity where it is necessary and needed	training on the job	own initiative	
Improvisation	training on the job	personal mentoring by more experienced	own initiative

		colleagues	
Confidence	training on the job		
Curiosity	school/course	training on the job	personal mentoring by more experienced colleagues
Be nice, willing to learn, be cooperative and respectful	personal mentoring by more experienced colleagues	own initiative	would like to have learned this during my initial education
staying focussed and fast	training on the job	own initiative	would like to have learned this during my initial education
Your department, your responsibility	training on the job	personal mentoring by more experienced colleagues	own initiative
leadership	training on the job	personal mentoring by more experienced colleagues	would like to have learned this during my initial education
Creativity	school/course	training on the job	own initiative
Own initiative	own initiative		
skill to listen and extract what is important	training on the job	personal mentoring by more experienced colleagues	own initiative
patience and endurance	own initiative		
be organized / think before you do	training on the job	own initiative	
Be humble. Always respect the more experienced guys around and listen to what they say. At the same time, trust your own knowledge.	training on the job		
be humble because there is no place for ego	training on the job	own initiative	
Motivation			
love of sound / music / listening	own initiative		
master your craft	school/course	training on the job	own initiative
Passion for Sound	own initiative		
Developing the skills to create a mix	training on the job	personal mentoring by more experienced colleagues	own initiative
willing to learn			
Motivation to work	own initiative		
own initiative	school/course	personal mentoring	own initiative

		by more experienced colleagues	
should see which work is to do next	training on the job	personal mentoring by more experienced colleagues	own initiative
Don't run away from work!	training on the job	personal mentoring by more experienced colleagues	own initiative
Don't mind long working days	training on the job	own initiative	
Dealing with working in weekends, nights, holiday's etc	own initiative		
interest	training on the job	personal mentoring by more experienced colleagues	own initiative
school/course			
Be open to new technology.	school/course	training on the job	personal mentoring by more experienced colleagues
learn learn learn!!!	training on the job	personal mentoring by more experienced colleagues	own initiative
Leadership			
ability to teach skills to others	training on the job	personal mentoring by more experienced colleagues	own initiative
Leading a small team with anticipating, which crew-member is capable for what	own initiative		
Problem solving	training on the job	personal mentoring by more experienced colleagues	would like to have learned this during my initial education
are familiar with the different material	personal mentoring by more experienced colleagues		
Ability to troubleshoot errors	training on the job	would like to have learned this during my initial education	
Problem solving skills	school/course	training on the job	own initiative
disposition to always find a solution ("Yes" to all!)	training on the job		
Technical troubleshooting	training on the job		

Be well prepared. Think about every possible situation beforehand. So you can keep a cool head in every stressful situation and everybody else feels safe when you are calm.	training on the job	own initiative	
Know how to search for an error in the chain	school/course	training on the job	
skill to stand stressfull situations	training on the job	own initiative	would like to have learned this during my initial education
to set priorities	training on the job	would like to have learned this during my initial education	
knowing options (if device breaks, situation changes....)	training on the job	own initiative	would like to have learned this during my initial education
methodical planing	training on the job	personal mentoring by more experienced colleagues	own initiative
Speed	training on the job	personal mentoring by more experienced colleagues	own initiative
Prioritizing tasks onder time pressure	would like to have learned this during my initial education		
Go on a job prepared and ask a client the information you need to be prepared for the job.	personal mentoring by more experienced colleagues	own initiative	