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ENHANCED LEARNING AND TEACHING IN INTERNATIONAL VIRTUAL ENVIRONMENTS

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Learning with your ears. Podcasts as a medium of education

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Invisibility and Volatility of Sound

In his "Versuch über die Jukebox" (Attempt on the Jukebox), Peter Handke devotes himself to sound, which, in the form of music machines, penetrates the living world and changes it through music and text. Sound becomes an element of identification, of inclusion and exclusion. It opens the small enclosed space to the world, it is a means of dissolution of boundaries. But it is not only about loud music, but also about the subtle signs, about the crackling of the record which becomes a listening habit or about the clicking and whirring of the music machine which produces familiar sounds on an equal footing with the music. (Handke 1990)

All of this is not an invention of the postwar period. Media history has been shaped by the acoustic element, by storytelling, for thousands of years. Stories were handed down from generation to generation. Ancient singers entertained and informed the audience, but they also used music and storytelling to establish a connection to the world of the gods. In the Middle Ages, preachers captivated their audiences long before the advent of printing. Theatres were performed in the marketplace, even in the church hall, conveying allegorical messages whose vehicle was the spoken word. (Faulstich 2006:75 f, 117 f)

"Human media" could not work without sound, and to this day hardly any new medium can do without sound - with the possible exception of photography. Even film quickly took up sound in order to appear complete. Gramophone and radio are per se acoustic media. Even the internet, where words and images admittedly dominate, is becoming more and more acoustic due to technical possibilities. Podcasts supplement texts of classic online newspapers or have developed into an independent form of narration in the last two decades, and they have also emancipated itself from their mother, the classic radio ("broadcast").

The term podcast emerged at the turn of the millennium and is composed of the medium of reception ("i-pod") and classical radio ("broadcast"). In contrast to radio, the podcast is a pull medium, i.e. a medium whose use is decided by the user, both in terms of the time of use and its intensity. Radio as a push medium attempts a pre-structured offer to a mostly indifferent audience. (see Lindgren/Loviglio 2022).

Radio as "the forgotten medium"

Radio has long been considered "the forgotten medium" (Pearse/Dennis 1993). In fact, the scientific interest in radio both as an information and entertainment medium and as a didactic element is surprisingly low compared to film, television, but also the new media internet and CD-Rom, with a few exceptions such as the numerous works on the instrumentalization of radio as a propaganda tool of the National Socialists. This comparatively low interest in radio is surprising in view of the medium's use. From the 1930s to the 1950s, radio was the leading electronic medium in the United States and Europe. Even today, daily usage is substantial and relatively constant: in 2021, for example, Austrians listened to the radio for 188 minutes a day, that's more than three hours. And that is only 5 minutes less than in 1995, and there can be no question

of the medium dying out. (Duration of daily radio use in Austria from 2001 to 2021 (in minutes), https://de.statista.com/statistik/daten/studie/315028/umfrage/taegliche-radionutzung-in-oesterreich/, Oct. 4, 2022)

Telling stories

The goal of mass media is to attract attention. Attention, according to media theorist Norbert Bolz, "has become par excellence the scarcest of all resources, and that is precisely what is being fought for now." Infotainment has become a necessity, not only in the media, but also at universities, for example. (Bolz 1997:46f) So how radio and podcast tell stories? What possibilities are there to gain attention? Sound and language work as basic elements. However, radio and podcast are not merely "the medium of the spoken word, but the medium of diverse acoustic signals that are simultaneously received by a dispersed audience" (Häusermann 1998:59).

The basic element sound is - as already mentioned at the beginning - less problematized in scientific source criticism than (still as well as moving) images or written sources and traditions. That images are not an objective representation of reality is generally accepted today. In the case of sound, this awareness does not seem to be present yet, which is why it makes sense to think about a source criticism of sound, especially when using sound in a learning and teaching process.

Interventions and changes are 'normal' in podcast/radio and therefore have to be considered in the course of a source criticism:

1. From the beginning the recording changes the reality, for example by the type and placement of the microphone. The different characteristics of microphones pick up different spaces. Close-talking microphones, for example, only pick up the acoustic space that is directly in front of the microphone. Omnidirectional microphones, on the other hand, pick up a spherical space around the microphone. Similar to the framing of the image in film or photography, the acoustic recording also selects parts of reality. Often sounds are produced artificially and have no equivalent in reality in the sense of a signifié according to De Saussure. Further processing by filtering, muffling, distorting or changing the voice, such as emphasizing bass, also changes the original sound.

2. In the process of creating broadcasts, there is a change in the temporal sequence. The sound is not necessarily reproduced in the recorded sequence, but comes into a new context. Sounds that have already been heard influence the reception of the next sounds. This is 'forgotten' mainly because the presentation in the continuum suggests a temporal sequence that prescribes a certain logic. Even sounds that can be heard at the same time - such as interviews and underlaid music - influence each other's meaning.

3. Deliberate changes are made in the production of radio broadcasts. Selection of statements can cause the context of spoken texts to be lost. Cuts shorten statements and slips of the tongue or pauses in speech that provide information about the speaker's state of mind - for example, about their insecurities - are omitted. (Hiebl 2004)

A problem that goes beyond the modification of sounds is the proof of audio material used in podcasts. Unlike written texts or even images and films (for example, through inserts), evidence of audio sources is only possible in the form of additional information about the moderation, which interrupts a continuous narrative. An alternative to this is written accompanying material such as information on an accompanying internet page, whereby, however, a second medium for mediation must be created.

Hence, the medium podcast/radio possesses two 'advantages' over other media by the restriction on acoustic information. On the one hand the podcast facilitates the concentration on the linguistic level which steps as a carrier of the information more strongly into the foreground than with audiovisual switching. On the other hand, the necessity of visualizing information which often leads to falsified statements, as is unavoidable in film, is eliminated.

However, podcasts/radio are not merely video, television or film without images. The podcast does not need any visualization, pictures or backdrops. However, it also works with the medium of images insofar as it suggests visualizations. The space presented in radio is therefore also called "productive illusion". Certain acoustic elements are typical of rooms. For example, low frequencies are emphasized in an interior room. The size of a room is suggested by reverberation. Typical sounds such as street noise indicate certain rooms. (Bitzenhofer 2001:159-161)

Various acoustic elements work as carriers of meaning and information. The spoken word is the basic carrier of information and carries 'knowledge'. However, it is not limited to the cognitive domain. Here, too, there are possibilities for emotionalization: through intonation, tone of voice, but also pauses in speech and other dramaturgical elements. (see Preger 2019) The spoken word is the text delivered by a moderator as well as the "original sound" of an interview partner. Non-verbal elements such as music or sounds have the function of conveying knowledge about facts only in exceptional cases. In most cases they serve to emotionalize, to express mood and authenticity. A sound can introduce a situation, which is then explained by the spoken word. Often a few seconds are enough to 'illustrate' a scene.

The change in listening habits: from radio to podcasts

People 'get used to' media narrative structures. This can initially mean that newly emerging media receive special attention which declines again over time. The medium slowly becomes a 'secondary medium' that is consumed with peripheral attention. The example of radio shows how much the technical possibilities of wireless sound transmission alone excited people at the beginning. The content was secondary at first. The broadcasts were nevertheless received attentively and completely. In the 1920s, there were apologias to radio which was now bringing art and culture to peripheral regions and educating their inhabitants and which - as Albert Einstein hoped - was becoming a means of international understanding. But there was also fierce criticism, such as that in Hermann Hesse's novel "Der Steppenwolf" (The Steppenwolf) where the radio was described as a device that emitted "brachial slime". Eventually, technical enthusiasm slowly waned.

Radio, however, remained the "leading medium" until the early 1960s, before it was deprived of this function by television. (Hiebl, Ravagianer, 2009: 10-19)

The "listening rhythms" of recent decades have changed. Original sounds on radio, i.e. excerpts from interviews/lectures became shorter and shorter. Long programs have been shortened or turned into journals with shorter segments. The trend toward "format radio" also points in this direction. Instead of fixed program areas with longer broadcasts on one topic, format radio mixes short information inputs with music, entertainment and service elements. Accordingly, the programs are becoming shorter and shorter. (Hiebl 2004:351-357)

The young medium of podcasting fascinated and continues to fascinate with its ease of use and breadth of content. The old dream of Bertolt Brecht, "not only to make the listener hear, but also to make him speak, and not to isolate him, but to put him in relation" (Brecht 1967: 129), i.e. to transform listeners into transmitters, or in Brecht's language into "suppliers", can be made possible relatively easily by podcasts. Podcasts, however, are not radio broadcasts transposed into the digital world of the internet. They have developed a new form of storytelling; actually, we should say new forms of storytelling, because the range is enormous in terms of length, audience, and complexity. (see Preger 2019) Podcasts can inform very briefly about something ("podcast to go") or can consist of long explanations for which there is no longer (broadcast) space in the classic radio program. Podcasts can entertain on a simple level or explain complex facts. They can be strongly designed, i.e. consist of a wide variety of dramaturgical elements such as different speakers, sounds, music, quotations, or they can focus on a narrator or a dialogue. (see Lindgren/Loviglio 2022)

Producing podcasts and radio broadcasts

Dieter Baacke sees "finding one's way in the new and complex media worlds" as the basis of media competence which he divides into four areas: Media criticism, media literacy, media use and media design. Media criticism is the basis for all further operations and pursues goals on three different levels: Analytically, "problematic social processes" should be able to be adequately grasped; reflexively, "every person should be able to apply the analytical knowledge to himself and his actions"; and in an ethical dimension, analytical thinking and reflexive referencing must be socially responsible. Media literacy as knowledge about media and media systems, reflected media use as well as active and creative media design as another form of (action) competencies complement the aspect of media criticism in the field of media literacy. (Baacke 1999:31-35) It is clear that media competence must change in the course of the development of the media landscape.

Media competence is thus broadly defined. It includes "the ability to acquire media on the basis of structured, synoptic knowledge and an ethically sound evaluation of media forms and content", but also the competence to deal with them critically and reflexively. Finally, the ability to design media "according to one's own content-related and aesthetic ideas, in social responsibility as well as in creative and collective

action" is also among the important goals of teaching media competence. (Schorb 2005:262) It is precisely the constructional character of the media that becomes clear through one's own attempt to 'construct' a media product. (Hiebl, Deconstruction 2009: 56)

The latter is also the goal of this teaching project on the design of podcasts. While two decades ago it was impossible to create high-quality audio products without expensive equipment for recording and editing, this has changed fundamentally, especially due to the enforcement of digital recording devices. Since the conversion of analog to digital signals is no longer necessary when "recording" with digital systems, a high-quality sound card is no longer necessary. The audio recordings are copied digitally and thus losslessly from recording devices to the computer where they can be edited using free programs that have all the necessary features.

The path to a radio broadcast, a podcast or a contribution to an audio station in an exhibition as suggested below shows one way in which knowledge can be made audible. Variations will be necessary depending on the topic, prior knowledge, time budget. There are five distinct phases to planning:

1. Find/limit topic
2. Collect material
3. Select and structure material
4. Writing/designing/editing
5. Checking/Evaluating

Find and limit topic

The search for a topic should be as 'realistic' as possible. This means that the topic presented in the program should be of interest to a certain target group and have a certain relevance for the listeners. The target group can be real, such as the school or the town/city where the school is located. But it can also be an imagined target group ("all Europeans", "all students"). The consideration of one's own living environment such as school or place has the advantage that the designed contributions are likely to be better received by the audience. Topics are chosen that are actually discussed in everyday life ("co-determination at universities", "my contribution to climate protection", etc.). Of course, occasions such as anniversaries ("500 years of Reformation") or current events ("Soccer World Cup") can also be used.

To structure the content, a process of brainstorming can be useful in the first phase, which is then transferred into a more systematized form, for example by creating mind maps.
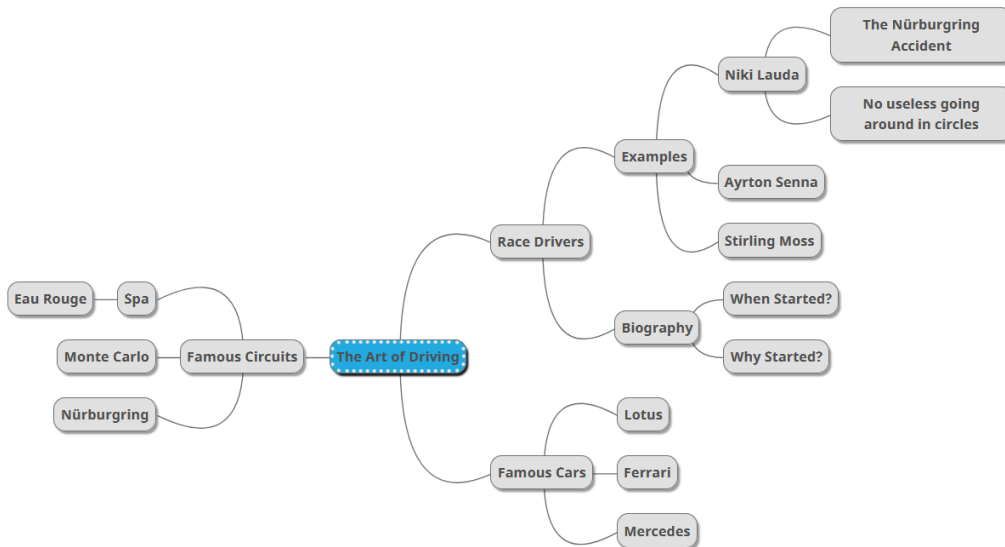
Picture 1: Example for a Mindmap

It is essential that the topic is narrowed down after an initial search, and that a manageable focus is set. In practice, for longer programs, the topic is limited by a so-called press release, which outlines the content in a few lines. In the case of short reports, the focus is often determined by the interview partners or sources chosen.

Austrian Broadcasting Corporation, Channel Ö1, 05/01/2022, 21.00

400 Years PLUS. Between Church and State. 400 Years of Paris Lodron University Salzburg

Design: Ewald Hiebl

The University of Salzburg looks back on an eventful history in 2022. It was founded exactly 400 years ago. After Vienna and Graz, it is the third oldest university in Austria. But in 1810, the Benedictine University established by Archbishop Paris Lodron was dissolved. The people of Salzburg had to wait more than 150 years until a new State University was re-established in 1962.
Many stories can be told. About the internationality of the students since its founding until today, about the increasing number of women, first among the students, only hesitantly among the teachers. There were and are financial bottlenecks and a lack of space, but also internationally significant research and teaching for broad sections of the population.

Picture 2: Example for a Press Release

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Collect material

The different phases in the creation of a radio broadcast are not to be understood as completed irreversible processes. They merge into one another. For example, the phase of collecting material will begin while the topic is being identified and limited, and even while the material is being collected, the topic may be modified as interesting aspects emerge.

Of course, acoustic elements, especially original sounds from interview partners, take a dominant position in acoustic mediation. But information obtained from books, magazines or the internet is also an important basis for the design of the broadcast. They are used for the moderation or incorporated into the broadcast as direct quotations - then read by another speaker's voice. Sounds and music are other important materials for a podcast. They can be self-recorded to describe a scene (e.g. sounds on the street, school band concert) or taken from the internet or from existing sound recordings. Here, of course, the copyrights must be clarified if the finished audio contribution is to be presented to the public.

The most important part of the material acquisition is the recording of original sounds, i.e. those parts of the broadcast that are contributed by interview partners. Interviews embody a creative and communicative process. Therefore, there are no simple recipes for implementation. However, it is clear that an interview with an expert must be prepared and conducted differently than a street interview with a randomly selected person. In all cases a list of questions should be available, but it must be handled flexibly. If interesting aspects emerge in the course of the interview, these should be given priority in favor of the topics listed in the questionnaire. It is essential to prepare the content of the interview and the interview partner accordingly. At the beginning of the interview, the interview situation, i.e. the goal, purpose and use of the recordings, should be clarified. A room that is as quiet as possible should be selected for conducting the interview in order to prevent disturbances, unless a particular situation and mood makes background noise seem desirable. Ideally, the recording is controlled by headphones in order to immediately hear disturbing noises such as humming caused by halogen lamps or similar. Modern flash recorders in the price segment below 200 euros usually produce recordings in radio quality. Less expensive recording media, e.g. dictaphones, can also be used for practice purposes.

Select and structure material

After the collection, the material is selected. In the case of short interviews, the most interesting parts can be noted down during the recording (with time code), longer interviews are often listened to again and a short protocol with time code is prepared.

> **The·Art·of·Driving,·interview·with·M.A.,·24.9.2022¶**
>
> ¶
>
> Q:·When·for·the·first·time·in·a·car?¶
>
> 0,05:·6·years·old,·cart·racing·with·dad,·from·the·beginning·huge·interest,·then·regularly,·in·a·group·of·children,·courses,·art·of·driving,·hints,·cost·a·lot·of·money,·huge·interest,·cneter·of·the·children's·world,·more·than·school,·soon·first·competitions,·quite·successful,·first·victories↵
> 1,22¶
>
> Q:·Remember·first·big·victory?¶
>
> **1,34:·it·was·at·the·age·of·11,·junior·racing·cup,·not·the·best·car,·huge·luck,·biggest·favourite·had·engine·damage,·wonderful·feeling,·top·of·the·podium,·trophy·still·on·a·special·place·in·house,·from·then·on·I·knew·I·will·stay·in·racing↵**
> 2,46¶
>
> Q:·When·did·racing·became·you·profession?¶
>
> 2,58:·first·parallel·to·highschool,·but·did·not·go·to·college,·not·possible,·because·racing·became·profession,·slightly,·age·16-18,·lot·of·travels,·across·continents,·training,·interviews,·developing·car,·raising·money,·no·other·job,·no·school,·university·possible,·age·of·18·profession·definitely·car·driver¶

Picture 3: Example of a protocol of an interview (with time code), the original sounds selected for the broadcast are highlighted in bold

The digital recordings are transferred - usually via USB cable - directly from the recording device to the computer where the selected passages are then cut out of the overall recording and saved. The freeware program "Audacity" which contains all the important features for cutting and editing sound is suitable for this - as one example of several.

After the original sounds have been selected, they must be incorporated into the narrative structure of the contribution. As a rule, the original sounds dominate the listening process. They are therefore of particular importance. The beginning and the end of podcasts/broadcasts are perceived most attentively by the listeners. For this reason, original sounds that are particularly expressive should be placed here. However, it is important to maintain an arc of tension throughout the entire broadcast. This can be achieved, for example, by presenting pairs of opposites and building tension by contrasting these opposites. At the end, the tension is released.

Writing/designing/editing

The process of writing, shaping and editing follows the selection and structuring of the material. The goal of this process is to produce a manuscript that - like a script - lists all the elements of the contribution/broadcast in temporal continuity. It is possible and probable that in the process of structuring the material there will be changes in the order in which the original sounds were made.

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The·Art·of·Driving,·Podcast,·24.9.2022¶

¶

Signation¶

Sound·of·a·Formula·1·Car¶

M.A.·3↵
1,34:·it·was·at·the·age·of·11,·junior·racing·cup,·not·the·best·car,·huge·luck,·biggest·favourite·had·engine·damage,·**wonderful·feeling,·top·of·the·podium,·trophy·still·on·a·special·place·in·house,·from·then·on·I·knew·I·will·stay·in·racing**↵
2,46¶

M.A.·still·remembers·well·the·feeling·he·had,·when·he·won·a·car·race·for·the·first·time.·He·was·11·years·old·and·he·has·not·been·the·favourite.·All·of·the·famous·driver·remember·their·first·victory,·also·N.L..¶

N.L.·2↵
5,34:·bought·better·car·with·the·money·left,·last·chance·to·be·successful,·last·chance·to·fulfil·a·child's·dream,·17·years·old,·first·victory,·slight·rain,·wonderful·feeling,·very·proud·and·self-conscious·then.↵
6,12¶

Picture 4: Example of a manuscript including all elements that are part of the podcast

For longer programs, there may be a brief intro phase at the beginning with compelling original sounds, current facts, or otherwise interesting information, which is then supplemented by an orientation phase for listeners ("What's in store?") and the central issues of the program. Of course, this is not necessary for short contributions of a few minutes.

In general, the language of podcasts/radio must remain simple and should be different from written language. Short and simple sentences are to be given preference - ideally 'narrated' rather than read aloud. Since podcasts have to do without pictures, it is important to include "linguistic pictures", i.e. to formulate as vividly as possible, to describe stories and scenes. Often, it also helps to associate with a topic (for example, through an internet search) in order to arrive at meaningful "images."

Of particular importance are the transitions between moderation and original sounds. They should be designed as fluidly as possible. It is usually necessary to introduce the interview partners before their first 'appearance'. However, this introduction should be kept as short as possible and should be limited to information that seems helpful for the listener to better understand. It is not necessary to present the whole biography and all affiliations of a person.

Before the moderation is recorded, the original sounds still have to be 'cleaned up': Promises, "uhs", long pauses or smacking noises are removed to make listening more fluent. How far this 'cleaning' goes is a matter of taste. In some cases it also makes dramaturgical sense to leave uncertainties and pauses in order

to hint at spontaneous reflection processes. In any case, overly distracting mistakes should be removed and cuts that cannot be 'cleanly' designed - that is, that can be heard - should be avoided.

The recording of the moderation can be done in a recording studio, but also with a recording device or by means of an external microphone or a headset on the computer. A noiseless background is important here. Slips of the tongue can be cut out later, but preferably in such a way that the listeners do not notice them. It is therefore not necessary to re-record the entire presentation if a mistake occurs.

The finished original sounds, the moderation, noises and music are mixed in a final step, i.e. arranged on different tracks of the sound editing program and brought into a continuous flow. It is important to equalize the volume of the individual parts. Fading in and out music and sounds requires some practice and experience. If the arrangement of the individual parts is successful, the program is saved as a complete file. However, it is recommended to save the individual tracks also as a "project" in order to be able to edit individual parts later.

Whether an exact time (e.g. 13 minutes 45 seconds) is specified or only a time frame (two to three minutes) is up to the user. It is more difficult to specify an exact time, because this usually means that an already finished program has to be shortened.

Control and evaluate

Before the finished contribution is presented, put online or even broadcast, it must be listened to and checked again. Deficiencies, especially regarding different volume levels of the different tracks, should be eliminated. Obtaining and accepting feedback is also important here. The program creators are usually so intensively involved in the topic that they are not at all able to receive their product from the point of view or with the ears of the listeners, who are often confronted with the respective program content for the first time. Therefore feedback is to be taken seriously, to be reflected, even if here the basic maxim of each medial product applies: There is no accounting for taste!

Note: This text is based on Ewald Hiebl, Vom Hören und Sagen. Hörfunk und Ton als historische Quelle und als mediales Produkt, in: Eduard Fuchs (Red.), Geschichte des Hörens (Historische Sozialkunde 3/2012), 33-40. The text has been significally changed, shortened and supplemented by newer information.

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