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# Who defines innovation in education? Participatory action research and organisational learning

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## ABSTRACT

Against the background of multifaceted societal challenges, the question of adequate future-oriented conceptualisations of education arises. Multiple stakeholders have raised demands for change and expectations of innovation in education are high. The topic turns out to be diffuse, bulky, and complex: What is innovative education? How can it be realised? These ‘big questions’ proved important for the participants in the inter-organisational initiative Educational Lab Carinthia. As the Lab sees itself as a regional promoter of innovation, it intends to offer new education formats and to develop innovative concepts and projects. Although the members of the Lab emotionally share the vision of ‘innovative forms of education’, a closer look reveals insecurities. The article describes how participatory action research (PAR) can initiate a discourse on the meanings of ‘innovative education’. It reflects on both the opportunities and risks of PAR processes in these specific conditions. It explores the Lab members’ experiences and provides literature-based theoretical orientation. PAR has turned out to be an approach that does not guarantee a breakthrough but strongly supports the Edu Lab’s development towards a reflective education innovation system. From this point of view, the question of ‘innovation in education’ appears as a matter of organisational learning.

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Participatory action research; transdisciplinarity; critical reflection; innovation management; organisational development; educational lab

## Introduction

Innovation in education is an important aspect and public discourse has seen an increase in the calls for change, especially regarding the formal education system. Teachers, representatives of administrative bodies as well as politicians or businesspeople underline the importance of education to cope with the challenges of modern societies and the rapid development in the world – be it the technological development, or the ongoing globalisation concerning nearly all our fields of action. One of the areas of special interest regarding education are the STEM fields and entrepreneurship. Various initiatives, mostly project-driven, are engaged in the further advancement of education in general, and they specifically aim at arousing children’s and young people’s enthusiasm for mathematics and natural sciences and at fostering their career orientation towards the technological

fields (TUMlab and FabLab, Munich, SFZ Berchtesgaden, Welios, Wels and Science Center Network are examples from Germany and Austria).

The Educational Lab Carinthia was founded as an inter-organisational initiative, where school-teachers, university staff and other professionals in the educational field are committed to innovation in education in a network-like structure. Apart from other topics, which arose during the development of the Lab, the question of what innovative education is, and which meaning the term should be assigned in the context of the Edu Lab, turned out to be both important and difficult to answer.

This article is written against the background of a participatory research project, which has accompanied the initiative since its start in 2016, and it provides insight into one specific project task, which was intended to clarify the view on innovative forms of education by means of participatory action research (PAR). The aim of the article is to describe the content-related and the procedural aspects of this research and to reflect on them methodologically.

In the following section the Educational Lab, its conceptualization, and its process of development is outlined and the accompanying research is described. In the third section the aspect of 'dimensions of meaning of innovative forms of education' are introduced. The methodical approach is described and the results reported. The fourth section is dedicated to a methodological reflection which focuses on the specific context of the research in this task. The concluding section links the PAR process to organisational learning and takes stock of what has been achieved and what is still on the agenda.

## **The 'Educational Lab Carinthia' as a regional promotor of innovation in education**

The Educational Lab is a spatial and social assemblage of initiatives in the Carinthian Lakeside Science and Technology Park (LSTP) situated in Klagenfurt, Austria. It consists of modules, which are organisational units working independently under the 'umbrella' Educational Lab, but which also cooperate actively. Some of the modules are organisationally linked to and supported by regional institutions (University, University of Applied Science, College of Education). A small LSTP team deals with organisational questions and the communicative integration of the modules. The establishment and development of the Lab are organised (and funded) as a five-year project and the long-term institutionalisation is one of the organisers' main goals.

The Educational Lab sees itself as a unique and outstanding Lab for innovation in education, possibly with an impact on the formal Austrian education system, which, except for the many fruitful initiatives of engaged people, can be considered as rather ponderous and change-resistant. The Lab provides an open research space, where new formats of teaching and learning concerning new contents can be developed, tested and experienced. The focus lies on the STEM-fields, research and development, entrepreneurship, internationality and – most recently – sustainability. The modules were found via open calls and the projects were assessed by a jury, which consists of representatives of formal and informal educational institutions, the LSTP and the regional funding agency. At the moment, both long-term modules and short-time initiatives in the Edu Lab are addressing people from kindergarten age up to adulthood, offering out-of-school places of learning with a modern infrastructure where (young) people can work on expanding

their knowledge and students in the teacher-training program as well as teachers can (further) develop their teaching practice ([www.lakeside-scitec.com/en/educational-lab/educational-lab](http://www.lakeside-scitec.com/en/educational-lab/educational-lab)).

As early as the project development stage, an accompanying intervention-oriented participatory research was introduced to support the development of the Edu Lab. The research design comprises two stages. The first stage was dedicated to working out a concept for the planned Edu Lab. In an interdisciplinary research team, and in intensive cooperation with the organisers of the Lakeside Science and Technology Park, a concept was developed which was to define some key points regarding the thematic orientation, the organisation, and the general approach and attitude towards education. On the one hand, the result of this working phase, the so called 'concept of utilization', was necessary for submitting the project proposal to the funding body, and on the other hand it was to provide some orientation for the participatory design of the Lab and the strategic planning in the second stage.

In the second stage the accompanying research focuses on the general development of the Edu Lab in respect of the thematic orientation and organisational aspects, the processes of communication and cooperation within the Lab, as well as with relevant stakeholders outside the Lab, and also the motivation to participate (from the perspective of the modules, but also from a user's perspective).

In the tradition of an Action Research approach the accompanying research establishes a social and communicative space for mutual learning and development among the involved actor groups, based on the alternation of reflection and action (McNiff and Whitehead 2011; Kemmis, McTaggart, and Nixon 2014). Furthermore, due to the transformative intention which goes beyond the Educational Lab and its orientation toward community action, the ideas and practices of Participatory Action Research are particularly important points of reference (Kemmis and Robin 2009). The goals of the research are twofold: it seeks first to gain both insights into the dynamics of the development process and (cautiously transferable) knowledge about processes of this kind and, second, to develop practice- and action-oriented results with and for the actors involved. The starting point and the basis of the accompanying research are the experiences, the knowledge, the motives and expectations of the participating people. Scientific knowledge gained in other research contexts and theoretic aspects are selectively integrated into the participatory process if necessary.

Methodologically, apart from following an Action Research approach, the accompanying research is based on the tradition of transdisciplinary qualitative social research and intervention research (with in-depth interviews and participating observation as main methods, and collective validation of interim results in workshops as an important setting) (Hirsch-Hadorn et al. 2008; Ukowitz 2012; Jahn, Bergmann, and Keil 2012). Regarding the theoretical position underlying the analysis, the research team provides a systemic and dialectic approach. From this theoretical point of view the development of the Edu Lab is understood as a social process, in which the various perspectives of the actor groups concerned have to be recognized and, to a certain extent also negotiated, and which aims at reflected collective decision-making.

The social system of Edu Lab has turned out to be rather complex, and various challenges have had to be tackled during the development process on the way from the initial idea to a shared vision of possible futures and a shared understanding of core

principles, which in the end are reflected in all the educational activities in the Edu Lab. The reflection on the central terms of 'education' and 'innovation' have proved to be important. The process of dealing with this important aspect will be discussed in more detail in the following.

### **Participatory action research on dimensions of meaning of 'innovative forms of education'**

In a first series of qualitative interviews (conducted with representatives of the modules, the supporting 'home' institutions, the regional government, the administrative body of education and the members of the advisory board), during network meetings and in several documents we identified some statements referring to the understanding of 'innovative education'; however, it was not a topic of high priority and the discussions remained fragmentary und unsatisfactory (especially regarding the problem of distinguishing between innovative and non-innovative activities). Right from the start the idea of fostering 'innovation in education' had a certain binding force and fascination, but it was not described in detail. Developing a shared meaning of innovative education, and establishing routines of reflecting this aspect, appear to be relevant processes for internal cohesion and identity formation, as well as for the transfer of ideas and practices into the (regional) educational system. Consequently, we decided to introduce a separate task for the accompanying research.

#### ***Methodological approach***

The research task had the goal to investigate the terms education and innovation considering the perspectives of the Edu Lab members and theoretic perspectives formulated in scientific literature and policy papers. Beside the reconstruction of the cognitive perception it was important to trace underlying concerns and emotions (wishes, expectations, disappointments, future perspectives). The research started from the hypothesis that education and innovation are normative and emotionally loaded terms which are principally open and need to be specified on a societal level, but also in a particular social-spatial context.

The material used for the analysis consisted of basic scientific works on the subject, the utilisation concept for the Educational Lab, meeting minutes, workshops and events, and the 26 interviews from the first series of interviews conducted in the accompanying research. Apart from that, another qualitative research-setting was introduced: a storytelling café with the modules and the LSTP-team (12 talks), organised with the intention to reconstruct educational experiences mainly from a learner's perspective. The storytelling café did not directly address innovative forms of education, but rather focused on impressive experiences and their significance for the people involved. That provided us with the opportunity to reconstruct what the members of the Edu lab themselves experienced as valuable (innovative) forms of education. The results of the literature review and the analysis and interpretation of the qualitative data were presented and discussed in a workshop in the rooms of the Edu Lab. The aim of the sub-project was to initiate a reflection process among the Educational Lab's members by opening up a communicative space and by providing possibly helpful theoretic knowledge about

concepts and innovation management. While theory should not prevail, it should support the reflection on the topics under discussion. The detailed examination of the terms should provide orientation in a critical reflection on current developments in the field of education.

### ***Results – The Edu Lab between a hesitant approach to abstract terms and vivid experiences in educational processes***

In the following a short summary of the results of the research is provided. The findings on conceptions of the terms *education* and *innovation* are described separately. After that, the results deriving from the storytelling café are reported.

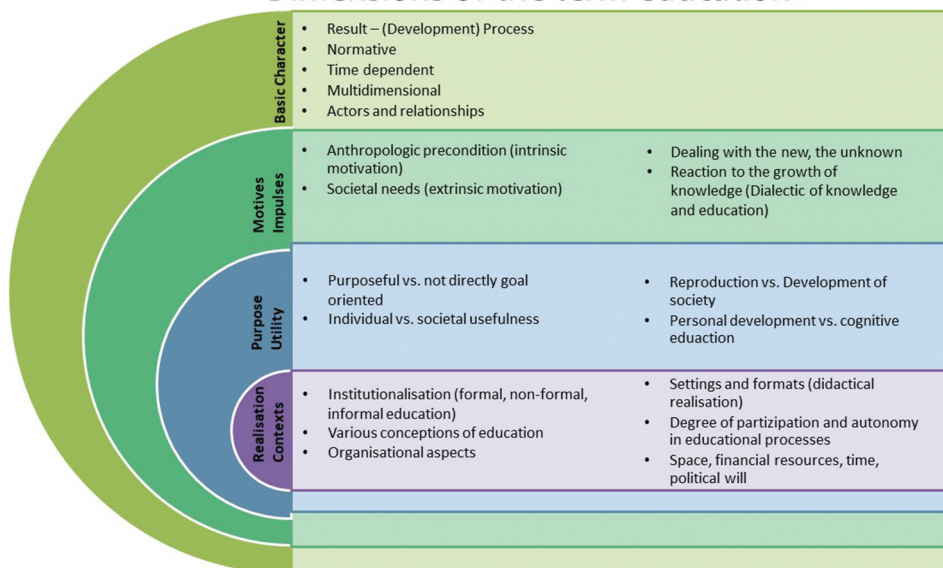
#### ***Conceptions of education***

A literature review reveals that we are dealing with a multi-dimensional phenomenon, as well as difficult terminology. What is striking, is the vagueness of the term, the inconsistency of its use and the multitude of definitions (Sandkühler, Regenbogen, and Friemert 1990). Education is not only a scientific term; it is used by various interest groups, which makes it even more difficult to define. One approach to obtain some orientation is to look at the ‘ways of talking about education’ (Dörpinghaus, Poenitsch, and Wigger 2013), i.e. the central dimensions of education that come across when people are conceptualising it – in the Educational Lab or elsewhere. We have to admit that concepts of education have a normative background and the understanding of the term contains visions, values, goals and ideas how these goals should be realised (Sandkühler 2010; Sandkühler, Regenbogen, and Friemert 1990). Consequently, the use of the term is strongly connected to societal, but also to individual beliefs and value patterns, is time-dependent and has a political character (Gosepath, Hinsch, and Beate 2008; Sandkühler 2010). A first and very helpful insight into the dimensions of education, i.e. the semantic structure of the term education, can be obtained from philosophical encyclopaediae, introductory works to educational science and education theory and handbooks. (Figure 1) provides an overview of the four identified dimensions:

The first dimension addresses the character of the term: Education can be seen as a process and as a result, it is characterised by its normativity, as well as its multidimensional and time-dependent shape. Further points are the importance of actors of all ages and their relationships – in their various roles within educational processes and also in decision-making about education, and the fact that any understanding of education addresses the relationship which humans build with themselves, with their societal surroundings and the world (Sandkühler 2010; Gosepath, Hinsch, and Beate 2008; Hentig 2009; Bernhard, Rothermel, and Rühle 2018; Dörpinghaus, Poenitsch, and Wigger 2013).

The second dimension addresses the motives and impulses for education: On the one hand there is an intrinsic motivation as an anthropological basic constant, on the other hand an extrinsic motivation which results from societal needs. Two further motivations are based on the question of dealing with the ‘new’, the ‘unknown’ and the growth of knowledge (on an individual and on a societal level) (Hentig 2009; Gosepath, Hinsch, and Beate 2008; Koller 2013; Burke 2014).

## Dimensions of the term education



**Figure 1.** Dimensions of the term education (Ukowitz 2019).

The third dimension addresses the purpose and the utility of education: This dimension is linked to the issues of motivation. We can distinguish between purposeful and not directly goal-oriented education, and when talking about usefulness individual and societal aspects have to be considered. Important side issues are the contradiction between reproduction of society and the further development of society through education, the field of tension between personal development through education and societal development and finally the interplay between cognitive and personality-focused education (Mittelstraß 2005; Hentig 2009; Koller 2013; Bernhard 2018).

The fourth dimension focuses on the realisation of educational processes and addresses the social and spatial contexts and the various formats and forms, in which education can occur: political will, financial resources, influences of special interest groups (e.g. the economy) belong to this dimension, as do forms of institutionalisation, ranging from totally informal and non-formal settings to formalised settings like public schools or specific didactical concepts which reflect the value patterns of an approach (Hentig 2009; Ladenthin 2014).

The attempt to define the meaning of the term ‘education’ shows that, in principle, it is indefinite, and it reveals fields of tension and dialectical constellations. The following questions are relevant for the Educational Lab

The bondage of education to time and decision-making:

- What are the ideas about education, given a specific societal context?
- How can (good) decisions be made and who participates in the decision-making process?

The explosion of knowledge, new technologies and changes in the quality of knowledge:

- How can the rapid development and ‘knowledge explosion’ be tackled?
- How should we deal with the field of tension between stability and change?

Regarding the utility of education the Lab’s link to the economic sphere becomes apparent:

- To what extent should education be oriented toward purposes?
- To what extent and in which way should education serve society and/or support the evolvment of individual predispositions?
- How should we deal with the field of tension between the reproduction of society (namely the economic logic) and the further development of society (against the background of the education aimed at autonomy and education as a form of reflective criticism of society)?

The interviews and the participating observations conducted during the accompanying research show that there is awareness of these issues among the modules. Particularly the question to what extent education should be oriented towards the economic sphere is addressed. The interviewees admit that it is the core function of education to awaken and develop young people’s potential, that education (apart from developing professional competences which are useful on the labour market) is an important basis for societal development, and that the freedom of education is a valuable good (‘If education only pursues money in the end it sells itself’, as one participant brought it to the point) (Ukowitz 2019). On the other hand there is pragmatism: Besides the big questions concerning society and a culture of education the interviewees stress that individual advancement in the professional world will always be an important aspect, and learning settings have to take that into account (Ukowitz 2019).

From prior collaborations with the Edu Lab’s management we know that critical reflection and transformative development are welcome. Nonetheless in the given context economic dimensions, which nowadays strongly influence education policy, cannot be excluded as a whole. Since there are different perspectives within one and the same system it is important to find balanced solutions, which nowadays, in face of the dominance of neoliberal attitudes, implicates a stronger emphasis on participatory and transformative aspects.

Given the openness of the term education and its normative character, negotiation processes are needed to clarify what is considered as important, i.e. which attitudes, skills and competences are focused on by educational activities. In a factually pluralistic environment these processes necessarily go along with contradictions, and liability of values has to be (re-)established from time to time. On the way towards decisions about education many aspects cannot be decided upon along a logic of right and wrong. It is necessary to find balances (trying for instance to resolve the dichotomies concerning the degrees of utility of education and the direct purpose of education). As such, the core duty of education lies in the self-application of developing and perpetuating the capability of reflection and judgment, also in connection with questions of education. That consideration touches on ‘big issues’, but it is also important on a small scale. For the Edu Lab a concept of education which is consistent at least in its basic assumptions, is an important basis for internal cooperation and also for the positioning of the Lab in the

regional landscape of educational institutions and initiatives. In the end the explicit focus on reflexivity, going along with an open identity, independence in thinking, the capability of judgment and communication, reflective criticism and the capability to deal with contradictions, could be an asset of an innovative educational environment that the Edu Lab intends to realise (Fischer 2012; Dörpinghaus, Poenitsch, and Wigger 2013; Koller 2013).

### ***Conceptions of innovation***

Innovation is a topic which is present in various fields of practice as well as in various scientific disciplines (Blättel-Mink 2006a). The economic sciences deal with it in the most intensive way, and the discourse is predominantly linked to technological development. In the humanities, innovation is present too, even if the intensity of dealing with it is not comparable with that in economics. The educational sciences and pedagogy, i.e. scientific disciplines which are relevant for the Edu Lab, pay less attention to innovation in a narrower sense. Instead of innovation, the term reform is used more frequently. While in the economic discourses innovation has a clearly positive connotation, in the field of educational sciences and pedagogy critical perspectives can be recognised. One point of criticism is the perceived ongoing economisation of education. In contrast, papers related to educational issues, which are edited by the OECD, the Organization for Economic Cooperation and Development, present innovation as a prominent aspect and estimated value.

At a first glance, the term innovation shows that, similar to the term education, one has to be aware of the value patterns which are lying beyond. Some authors state that innovation generally has become a leading idea and 'credo' in modern societies, reaching far beyond the economic sphere. Innovation is associated with successful development and improvement at all levels and it has gained the shape of an inherent necessity – the here and now is perceived as less perfect than the prospective future promised by innovation (Briken 2006). On the other hand, the ambivalent character of innovation has to be kept in mind – especially in connection with ecological challenges and the unintended impact of technological development (Blättel-Mink 2006b).

A more thorough consideration of innovation – and this is similar to education – reveals that it is difficult to clearly define the term innovation (Tasiopoulou and Wastiau 2017). Definitions contain phrases such as 'an idea that is perceived as new', something that is 'new or significantly changed', something 'that changes social practice', and that is 'creating some value' (*Innovating education and educating for innovation: The power of digital technologies and skills* 2016).

The wording provides both an insight into the open character of innovation, and an outlook on the challenges which arise when dealing with it.

### ***Experiences with education – results from the storytelling café***

The storytelling setting provides insights into the participants' impressive, valuable experiences regarding education. It becomes obvious that in designing educational formats the people engaged in the Edu Lab are influenced by their own positive and negative experiences as learners. The most important aspects are:

- Social relationships
- Meaningful learning
- Fostering curiosity as an important driving force in educational processes
- Balanced handling of ambivalences (voluntariness, autonomy, the fields of tension between fun and effort, between duty and freedom of choice)
- Variety of learning settings and methods
- Focus on literacy aspects (reflection-oriented and critical learning)
- Adequate environments and contextual conditions (rooms, equipment, time frames)

One of the most frequently mentioned topics is the social dimension of teaching and learning. The participants talk about teaching persons who they have met in their own educational history. Most of the participants express, that good relationships between learners and teaching staff are important. Self-confident, fair teachers are valued very much (Ukowitz 2019, 44). Some teachers are called a 'source of motivation', they have caused 'something to vibrate', they have 'caught' the young people 'with humour' or 'on a buddy-level' (ibid., 64, 44). Negative experiences are described very impressively: authoritarian behaviour and 'threatening gestures' created pressure, had an intimidating effect, and 'triggered fear' (ibid., 44, 54). Personal devaluation and mocking are not seen as a valid prerequisite for successful educational processes. Symmetrical relationships, instead, tend to be perceived as fruitful, and 'benevolent hierarchies and not judging and sanctioning' are desirable (ibid., 44, 45). The latter includes also changes in the culture of failure. The participants consider it important to change from an attitude of 'mistakes were absolutely not allowed and mistakes were bad' to an encouraging 'look, try, do it, you are also allowed to make a mistake' (ibid, 51). Some participants say that they see memorable teachers as role models, and that as adults in their educational practice they orientate themselves towards their own teachers' working styles (ibid., 44). Cooperative forms of learning are another important aspect. On the one hand, they are about being 'socially embedded' and experiencing 'empowerment through the group' (ibid., 45). On the other hand, participants found it more inspiring to work with colleagues: 'I'm not alone in front of the books, the three of us sit down together and talk about it. That was actually my favourite form of learning.' (ibid., 45)

Another crucial point is the meaningfulness of learning. The participants refer to learning contents and to learning conditions like curiosity, voluntariness and autonomy. Negative examples prevail. Participants remember moments 'where I've just senselessly memorized something', 'no one knew what that was' (ibid., 53, 62). Participants also address the problem that when they were young, they were not interested, and only later began to appreciate certain topics: 'And in retrospect, I think it's a shame [. . .], but the motivation was missing. [. . .] I guess, the stimulus just wasn't there at school.' (ibid., 65) As adults, in the context of further education, the participants admit being rather demanding. They appreciate up-to-date learning settings and practical relevance. One participant talks about negative experiences and missing aspects: 'The content, really dealing with participants' [needs] [. . .] it's a paid event [. . .] [and] it was not very demanding in terms of content. Nothing that I couldn't have read somewhere, nothing that would have been supplemented by experience or by exchange of knowledge, or something like that. The added value was simply not there.' (ibid., 50 f.) Upon reflection the participants address the linking of theory and practice in educational processes as something that has proven

to be an important aspect. They appreciate educational content with a connection to real life and application, and they consider it important to explicitly explain why a topic has been chosen and in which respect it might be relevant (ibid., 55). The focus on literacy aspects, including critical learning, arises (ibid., 51).

Particularly noticeable is the strong focus on the importance of voluntariness in educational activities and the importance of (at least partial) independence and self-determination. This is a topic that comes up in all conversations. Educational opportunities with active engagement as learners tend to be more fruitful: 'That was the first thing that came into my mind, the freedom to do something. That is something [...] that actually had meaning to me several times.' (ibid., 46) Vice versa tight guidelines are perceived as uncomfortable: '[...] everything was very structured. Subjects and contents are all given. It was not possible to set your own individual priorities. And to follow your own learning interests.' (ibid., 46) Regarding curiosity as a driver for educational effort, the storytelling café shows that participants consider themselves to be very curious people, 'pathologically curious', as one expresses it (ibid., 50). Reflecting on the years at school, the participants say 'being interested is an absolute prerequisite for a positive learning experience' (ibid., 50). They transfer their experiences to their engagement in the Educational Lab: 'Children are naturally curious. This [...] should not be curtailed.' (ibid., 15). In this context, the participants mention the importance of setting a variety of different learning impulses concerning didactic concepts, learning settings, materials and methods.

Participants also talk about ambivalences and raise questions of motivation, voluntariness and autonomy. Motivation can become fragile and perseverance even in difficult situations is important. Between the ages of 15 and 18 school was mostly experienced as a necessary burden: 'School is boring', 'that wasn't enjoyable learning in high school', 'that wasn't so exciting, just serving one's time, copying, learning, testing', the participants say (ibid., 62, 64). Even at university there are similar experiences of 'terribly boring' lectures and the wish 'to pass through quickly' (ibid., 47 f.). Upon reflection, participants say that learning is not always fun. They address that fruitful learning can be associated with both, relaxed and very demanding situations. Structured, ordered learning and free, self-determined learning should be brought into a balance: '[That] is not a contradiction for me. [...] it takes both. As much freedom as possible within rigidly defined limits. [...] I think you need a bit of structure to experience freedom. [...] Freedom without borders doesn't work in my eyes.' (ibid., 49)

### ***How to judge innovation and how to support ongoing innovation processes***

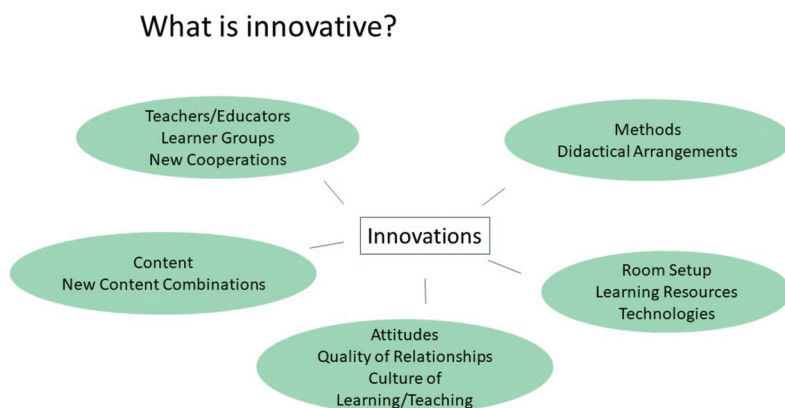
Regarding innovation, there are two major questions that concern the Edu Lab: Which are the criteria for judging an innovation (*what* is innovative)? How can the Edu Lab as a whole remain an innovative educational initiative? (The aspect of innovation management arises.) The module representatives think critically about innovation in the Lab and at the same time they are somewhat unsure how to handle the topic. To facilitate orientation a 'checklist' was introduced for discussing and judging the character of innovation based on experiences in the Edu Lab and on scientific and OECD-related works was introduced:

- What is new? (dimension of contents)
- To what extent is something new? (dimension of intensity)
- New for whom? (subjective dimension)
- New by whom? (actor's dimension)
- Where does innovation begin, where does it end? (procedural dimension)
- Does 'new' automatically mean good or successful? (normative dimension)

Regarding the 'What', the Edu Lab focuses on offering new educational settings and formats, which are then transferred into formal educational institutions. The modules see political will, time, and financial resources as important prerequisites for innovation processes. The perception in the modules of what could be innovative and which dimensions of educational activities are concerned, is similar to the conceptualisation suggested by authors of the Centre for Educational Research and Education (CERI), who developed the ILE '7 + 3' Framework (*The OECD handbook for innovative learning environments* 2017). It remains to be added that the Edu Lab members specifically emphasized stronger links between education and research, personalized and need-oriented educational environments and a new, more relaxed culture of failure. Figure 2 shows the mentioned dimensions in the ILE '7+3' Framework and in the PAR process:

An aspect which has repeatedly been commented on (especially by the LSTP organising team), was the abovementioned subjective dimension of the question 'New for whom?'. The following actor groups were identified:

- Experts in theory like education scientists, politicians, or administrative bodies
- Experts in practice like the board of educational institutions, teachers, or kindergarten teachers
- The target groups of the Lab such as children, pupils, students (especially those striving to obtain a teaching degree), and the general public



**Figure 2.** What is innovative? (own representation following the ILE '7 + 3' framework, (*The OECD handbook for innovative learning environments* 2017)).

The modules are to be innovative, but if we take the relational character of innovation seriously, the perception of what can be called an innovation (and what cannot) will be different depending on the various perspectives, and innovation must be assessed in relation to the level of development. The activities of the modules are set in different stages of development. There are established formats, which have proven themselves in some contexts, but are still new in others; there are formats which have been newly developed in the context of the Edu Lab; and there are modules which are only at the beginning of transforming ideas into 'products'.

The question of how the Edu Lab and the learning environments created there can continue being an innovative educational initiative leads to procedural aspects and the management of innovation. Some basic points providing a first orientation have been introduced (Hauschildt et al. 2016; Franken and Franken 2011; Vahs and Brem 2015; Borzillo and Kaminska 2013):

- Innovation is successful when attitude, a common strategic orientation, careful innovation management and supporting surrounding conditions engage with each other.
- Innovation processes proceed in several phases. They start with an idea, new findings or observations, often integrate research activities, proceed to a development phase which is followed by the introduction of the innovation and its ongoing implementation.
- Innovation is conducted by several participants (there are persons with ideas, a small development team, supporting persons).
- Innovation is successful if there is a supportive culture of innovation (motivated people, open communication, participatory processes, a creative milieu) and if organisational structures and processes are provided which foster innovation (flat hierarchies, autonomous teams, heterogeneity and trust within teams, interdisciplinary exchange, an adequate process design and routines and rituals which support innovation).

The 'checklist' and the basic points regarding innovation processes should support the exchange among the Edu Lab members along the questions 'What is important for us in the context of innovation?', 'Where do we stand currently and where do we want to start innovation processes?', and finally, 'What kind of innovation management do we want to introduce?'

### ***Interim résumé***

The Edu Lab members turned out to be rather unfamiliar with the subject of innovation management. The perspectives on innovative (and valuable) forms of education are numerous and widely reflect the theoretic literature: there is a variety of possibilities to define innovative education, the outcomes are value-based, and what is experienced as innovative depends not only on the teaching persons, but on the learners as well. The storytelling café showed that what is perceived as being innovative does not necessarily have to be new. Often, 'the old' is rediscovered: one of the modules with links to business schools re-appreciates working with pencil and paper instead of laptops. Moreover, the

partly contradictory statements in the storytelling café showed, that there is no simple recipe for positive and fruitful experiences in education. Apart from the learners' consistently addressed need to be perceived and respected as persons, successful education processes seem to depend to a certain degree on favourable constellations in specific situations. They depend on the people involved and on the quality of their relationship, on the offers (content and didactics), and on the context (rooms, time frames, materials). Apart from that, a good balance between continuity and change of the offers seems to be important. In this sense, professionals in education are always on 'unsafe territory'. What they can do is create favourable conditions, continuously observe and reflect the dynamics in the education processes and react according to the situations. High demands on oneself can be motivating, but at the same time it seems to be important to preserve a certain degree of modesty and calmness and not to lose sight of the fact that education processes are not totally controllable, but rather follow their own situation- and constellation-specific logic.

On the one hand, the PAR process has facilitated the reconstruction of individual perspectives on innovative forms of education, which are an important starting point for further work on the topic, and on the other hand, it has highlighted procedural aspects and provided information on how to design further steps. One of the most striking observations concerns the PAR process itself: Whilst the educational experiences and ideas of innovative education are expressed fragmentarily, albeit confidently, the Edu Lab members appear hesitant with regard to a more systematic approach to the term and to make collective determinations.

## **Methodological reflection**

PAR processes are described as messy and complex affairs and a challenge for any participant (Hawkins 2015). Even if the researchers involved are experienced in designing and accompanying participatory processes, surprises cannot be avoided. Although participation is a broadly reflected topic, there are many interesting aspects for the self-critical reflection of PAR processes (Rauch 2020). In line with that, four aspects shall be mentioned: the influence of the characteristic of a topic on the course of a process, the question of knowledge democracy and legitimation, the fragility of participation and the role of researchers as honest brokers of (scientific) knowledge.

### ***The influence of a topic's characteristics on the course of the PAR process***

As mentioned above the discourse on the subject of innovative education is not linear and remains fragmentary. There have been opportunities for sharing ideas and decision-making (a workshop was held as part of the research task, the explicit intent of which was to discuss the interim results and next steps, Edu Lab networking workshops, workshops during the strategy process). Yet, so far, the ideas have not been integrated satisfactorily. It seems to be easier to act along implicit assumptions or to express them associatively than to clearly define the perspective and sum it up systematically and comprehensively. The observations lead to the hypothesis that the characteristics of the topics under

discussion influence the PAR process. Extensive and complex topics might evoke the feeling of insecurity and the fear that it will never be possible to ultimately grasp them. A professional culture and standards for development which can guide decision-making (Rauch 2020) seem to be missing in this case due to the group's heterogeneity. These insecurities challenge PAR processes, which are to foster and support autonomous decision-making by the people concerned and to contribute to the improvement in current working situations in shared social worlds through the reflection on their own attitudes and practices (Rauch 2020; Davidson and Edwards-Groves 2020).

### ***The question of knowledge democracy and legitimation***

An emancipatory attitude towards the people concerned by a subject is one of the most important characteristics of Action Research approaches. By including all people involved as active participants, by giving them a voice, AR offers a methodology to foster knowledge democracy (Stern 2019), which means balancing epistemic asymmetry and acknowledging the existence of multiple stocks of knowledge and their underlying value patterns (Stern 2019; Davidson and Edwards-Groves 2020). Along these lines, knowledge democracy implies the legitimation to participate in the decision-making on the subjects under discussion, an aspect which touches the transformative character of AR. The question of knowledge democracy arises particularly in social constellations characterised by a strong disbalance of power (Stern addresses this aspect against the background of the North-South relationship and the question of the prevalence of Western science over indigenous knowledge (Stern 2019)). That is not the case in the PAR process in the Edu Lab. Still, it can be observed that there is a lack of explicit decisions and decision-making as to the common understanding of innovative education. The whole system seems to wait for someone (from outside the Lab) to declare and certify what is innovative and what is not. Particularly the organising team consisting of people with no professional background in the field of education, seems to hesitate to build on the assessments of their group. The dynamic outlined is contrary to an AR attitude, and this dynamic has developed even though the members of the Edu Lab are committed to the participatory process.

### ***The fragility of participation***

The observation that people hesitate to draw conclusions from the results of the reflection during the PAR process leads to the question of the potentials and limits of communicative spaces (Kemmis and Robin 2009) which are opened up through a PAR design and to the question of the implementation of results, or in other words, a collective action after the reflection is necessarily part of PAR processes. Participation appears as a complex, fragile and sometimes paradoxical phenomenon (Arieli, Friedman, and Agbaria 2009). In the process described here, the complexity derives to a certain extent from the fact that the subject of innovative education is embedded in a broader organisational development process which also involves scientific research and counselling. The Edu Lab members are very challenged in that in addition to their everyday routines in their home institutions, they are engaged in the development of the Edu Lab modules

and involved in more than one participatory process concerning the development of the Edu Lab as a whole. Another factor is the different system logics of the institutions involved, which make it difficult to decide on collective actions to be taken. Thus, the contextual conditions in the PAR process are positive, since the participants are basically committed to participation, but also negative, since time constraints and institutional interests, at least in the development stage, hinder an open, deep, and implementation-oriented participatory process. The development of a culture of participation, which includes the negotiation of conflicting interests (Rauch 2020), turns out to be an important part of the whole engagement.

### ***Researchers as 'honest brokers' of (scientific) knowledge***

University researchers in PAR understand their role primarily as a facilitating and empowering one. In line with the critical observation on the term facilitation, alluding to the 'illusion of neutrality' (Kemmis and Robin 2009) university staff see themselves as part of the development process in the Edu Lab, as an actor group with specific characteristics and duties. Besides supporting the communicative space, the university team can contribute to the collective process with particular knowledge that might be helpful for the group (Kemmis and Robin 2009) and it can provide support by sharing observations and feedback. It was 'theoretical' knowledge about conceptions of education and innovation processes which was introduced by the university team and set in relation to the participants' perspectives, as well as feedback from the view of a critical and reflection-oriented concept of education. Knowledge and feedback are both to be seen as suggestions, and finally the group decides whether something is to be adopted or not. In this sense university researchers are acting as 'knowledge brokers' who make their own arguments transparent, but do not promote a specific position or option. They try to increase the repertoire of options and to support decision-making in a group (Pielke 2010; Grunwald 2018).

### **Conclusion: organisational learning on the way towards innovation in education**

The research task on 'innovative forms of education' aims at supporting the strategic orientation in the Edu Lab. This issue is important, as it touches the core of the activities and is essential for the development of a common identity within the Lab. At the same time the topic turns out to be diffuse and bulky. It seems that emotionally the members of the Lab have a shared vision of 'innovative forms of education', but a closer look reveals insecurities and difficulties in talking about them explicitly.

Innovative education is not something predefined and given, but at least partly a matter of decision-making within the Lab, and it takes courage to make these decisions. Furthermore, innovation is an unfinished process, it is something preliminary and its dynamics push further, but it has no end, no arrival (Nowotny 2005). The exploration leads to the insight that scientific literature or external expertise can support orientation, but it cannot replace forming opinions and making decisions on site. The PAR process

should open the discussion and provide orientation. The group did not really accomplish a breakthrough, but we succeeded in creating a basis for the next steps. The questions deserve further commitment and should be integrated into the participatory strategic planning process. It can be assumed that the results of the discourses in the Edu Lab will never be final and irrevocable – but in facing them, the Educational Lab undergoes organisational learning (Schön 1983) and will, step by step, develop into a critical and reflective education innovation system.

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