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Master Plan School Catering[1]

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1 Based on: Peinelt V, Wetterau J: K53. Masterplan für die Schulverpflegung, Volume 2, S. 580-638, in: Peinelt V, Wetterau J: Handbuch der Gemeinschaftsgastronomie. Requirements, Implementation problems, Solution concepts, 2nd edition, 2016, Rhombos-Verlag, Berlin, 1642 P.

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Unless otherwise noted, the illustrations were created by Volker Peinelt.

Summary

The level of school catering is unsatisfactory. It is of decisive importance for the healthy development of children, good school performance and the development of a culinary awareness of quality. After a characterisation of the German school catering, a master plan is presented, which shows how the conditions can be improved. The different catering systems are dealt with in detail. The criteria for the decision should be staffing requirements, quality and costs. In many cases, the so-called fresh cuisine is demanded without being aware of the conditions to which this is linked and whether these are fulfilled in Germany. The result shows that basically only the temperature decoupled systems are suitable for Germany. In order to achieve the urgently needed reorientation, certification is indispensable.

1. Introductory remarks

A large part of this applies to catering in day-care centres. There are several reasons for addressing this issue.

First of all, it is very important from the point of view of health policy that young people get to know and appreciate a wholesome and attractive meal and, above all, perceive it daily. This supports their physical and mental development and thus promotes their academic performance.

Due to the long influence of a good diet - ideally from the day nursery to the Realschulabschluss, i.e. from 3-16, thus 13 years! - *Secondly,* eating behaviour and attitudes towards eating can be significantly influenced in the sense of relationship and behaviour prevention. This is an antipole to the unfavourable offers of many snack stalls and fast food restaurants. Of course, it will no longer be possible to get them out of the world. But it can be learned how to handle them sensibly, because there is nothing wrong with an occasional use of such food. In this respect, this topic is very complex, since in addition to the purely technical aspects, questions of pedagogy, the participation of the entire school community and state influence also play an important role. Although all these additional topics are important, some of them can only be touched upon in this chapter.

Thirdly, a full-fledged diet that is maintained throughout one's life is an important contribution to public health. It is well known that diet-related illnesses are constantly on the increase, often due to the alarming extent of obesity, which is increasingly addressed in the Federal Government's nutrition reports, e.g. the 2012 report[2]. The cost of these diseases is constantly increasing and already represents a serious financial burden for health systems. In this respect, optimal school catering is a very low-cost investment - it "pays off". A prevention against many civilization illnesses is very well possible with a full and attractive school catering, since it starts early.

Last but not least, school catering is characterised by a low degree of professionalisation like no other sector. This is apparently not clear to many, since fresh cuisine is often still required, although the conditions for this are the highest. The question of the "right" catering system for school catering must therefore be raised. How a proper catering system can be identified will be one of the most important questions to which this article aims to provide answers.

2 DGE (ed.): 12th Nutrition Report. Warlich Druck, Meckenheim, 2012, 427 pp, here: p. 119ff

The lack of professionalism does not only affect operations, but also planning and decision-making. Parents, pupils and teachers want to have a say in many decisions, but often do not have the necessary qualifications. As much as participationis desired on the one hand, the area of competence must be strictly defined on the other. This needs to be elaborated. The question must therefore also be asked to what extent the state should allow every school community to do what it considers to be right, with the risk of making wrong decisions. This does not mean that the State par ordre du mufti forces the introduction of certain systems. What the influence should look like instead is also explained in this chapter.

The special features and importance of catering in schools and day-care centres make it useful to go into this in more detail in this chapter.

2. Stages of the Master Plan

2.1 Preliminary remarks

A new approach needs to address the problems in a broad range of ways. Purely technical optimizations are certainly not enough. This begins with increasing the appreciation of food, includes the introduction of the school subject of nutrition and does not stop with the design of the refectory. It goes without saying that the statutory regulations must be adapted to school catering. Such an approach requires, among other things, fundamental educational, financial and socio-cultural changes and can only be implemented, if at all, over a long period of time.

Although this multilateral approach is important, it cannot be explored in any chapter. It should be clear that the changes should not be associated with further burdens, but with a relief of the local assets. Knowing the complexity of the subject, we will try to develop a master plan in which the most important aspects of school catering are dealt with. The term master plan is used in various organisational areas. A comprehensive approach will be developed for a given objective, taking into account all the beneficial and disincentive factors. In addition to the questions of content, the time factor is also important, so that all measures must be integrated into a well-coordinated chronology. The claim to describe all factors and to integrate them in a goal-oriented manner will not be fulfilled within the framework of this chapter. However, it tries to describe the essential aspects, to question them, to comment on them and to express their significance for a successful school catering.

Fig. 1 lists the topics or subgoals of the chapter, which are described in more detail below. The considerations are based on a presentation given at INTERNORGA in Hamburg in March 2014[3].

3 Peinelt V: Master Plan School Catering - what would be necessary? Lecture at the 4th INTERNORGA FORUM SCHULCATERING on 18.3.2014 in HH

Fig. 1: Stages for the School Catering Master Plan

2.2 Subgoals for the Master Plan

Before a decision can be taken on measures within the framework of a master plan, individual goals must first be formulated. These can be divided into two large areas, internal and external. The *internal* area refers to all activities for good catering that can be carried out in the school or at the service company. The *external* sector, on the other hand, falls within the remit of the state, which is responsible for legal, financial and educational regulations.

An important goal of the internal division is certainly first and foremost a **wholesome diet**, as defined by the qualitystandards of the DGE.[4] But fullness alone is by no means enough. Many so-called **boundary conditions have** to be considered, which are essential for a successful implementation. These include, above all, hygiene, ecology, occupational safety, the complaints management system, the presentation of food or the system question as such, to name but a few. In the qualitystandards, boundary conditions are also addressed, but this usually happens only briefly. This means that the standards cannot sufficiently define the requirements for these conditions. It is not enough, for example, to refer only to the relevant regulations on the extensive subject of hygiene. That doesn't help the active at all. Further aspects of the school catering standards that could be improved were discussed in[5]detail in a publication on the situation in Japan.

A successful school catering must also pay attention to the acceptance of the offer. This includes attractive dishes that meet the wishes of the target group. An optimal **selection** and **presentation of** the food as well as a target group-oriented **ambience, e.g. with** a WLAN connection, are also essential.

As far as the right **catering system** is concerned, the aspect of the **staff** required must also be addressed. The issue of **financing** also plays an important role. Here it has to be clarified how high the costs must be in order to be able to deliver an acceptable quality. Pricing is one of the most pressing problems in school catering. Last but not least, **sustainability** (in an overarching sense) must also be addressed. For what use is it if a catering system functions to some

4 DGE (Hrsg): Qualitystandard for school catering. 4. up, 2. corr. Reprint, 2015, 54 p., DGE e.V., Bonn
5 Peinelt V: Can Germany learn from school catering in Japan? 2nd edition, Rhombos-Verlag, 2018, 420 pages, www.volker-peinelt.de/schulverpflegung/internationaler-vergleich/

extent under random circumstances, but has serious weaknesses after the departure of committed people? This must be prevented by a concept that does not depend as much on individuals as it does today. Therefore, decisions should not only be based on current circumstances, the so-called constraints.

The **participation of** all groups involved is important and desirable, but should be appropriate. It must therefore be clarified what this means, i.e. who should be involved, with what tasks and in what form. The Mensabeirat is a good instrument.

The external objective should first of all focus on the **legal regulations in** order to avoid or eliminate inhibiting or even counterproductive facts. High-quality school catering requires a certain amount of **funding**, which must be secured in the long term. In addition, more room should be given to neglected **nutrition education.** The subgoals of a master plan are listed below.

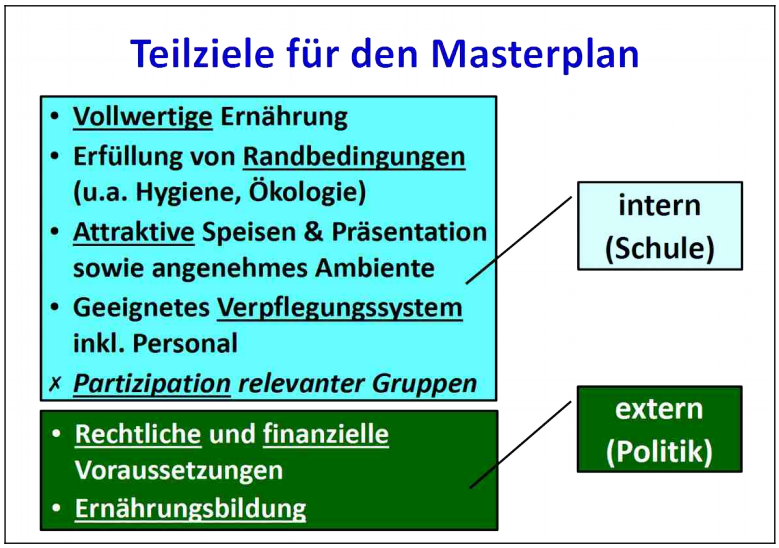

Fig. 2: Internal and external sub-goals for the master plan

2.3 Situation analysis

2.3.1 General situation analysis

It is currently assumed that there are about 17,000 all-day schools offering hot lunches[6].

As is well known, education policy is a matter for the federal states and therefore also school catering. Responsible for the establishment, tendering, maintenance and even quality controls are districts, towns and municipalities within the framework of local self-government (Article 28 GG). This responsibility must not obscure the fact that it is usually the local actors, i.e. in the schools, who are supposed to organise lunch - usually without sufficient qualifications.

A look at the school laws of the individual federal states shows that there is little binding legislation there. For example, the quality of food is openly formulated and no direct claims can be derived from it. Also, requirements are predominantly found in the form of decrees, administrative regulations and recommendations. Statutory regulations on school catering are the exception. The school laws usually use such general formulations as "an orientation towards the

6 Wetterau J, Schmid B: K1. Market for out-of-home catering. In Peinelt V, Wetterau J: Handbook of community gastronomy. Requirements, implementation problems, solution concepts, 2nd edition, 2016, Rhombos-Verlag, Berlin, 1642 p.

principles of healthy nutrition". The networking bodies are obliged to disseminate the quality-standards of the DGE. But because of the voluntary nature of these standards, there is no way to enforce them.

As a consequence of this non-binding nature of the standards, combined with the responsibility of the lowest organisational levels, a large number of implementation variants in school catering were created which cannot be assigned to any system. Such unsystematic, school-specific catering concepts naturally also require very specific efforts, which are rarely transferable. This development has helped to prevent the establishment of a uniform catering system at a high level. Unification at a low level took place in the eastern federal states, where hot meals dominate[7]strongly, as this type of food is the cheapest - and unfortunately also the worst - in view of the long heat retention times.

Although the Conference of Education Ministers (KMK) decided at the beginning of 2004 that lunch should be provided in all-day schools, the obligations are only vague. Although the school authority is responsible for providing school meals, this does not automatically mean that the school is responsible for financing them. The costs incurred are spread over several shoulders, which is also handled differently from country to country. In addition, the costs are only partially recorded. Attempts to determine the full costs regularly fail due to the lack of data in the administration, which only knows partial costs.

The financial resources of the school authorities for lunch are very limited and are not sufficient to meet the qualitystandards. Unfortunately, there is also no higher level funding commitment to cover the cost of all the processes of a hot lunch. Due to a lack of concepts and cost transparency, it is difficult to determine the actual amount. A study has provided a little more clarity on reasonable prices for school meals[8]. These are significantly higher than those accepted by the parents. Instead of developing inexpensive and attractive concepts that could be introduced across the board, it is preferable to cover the prices[9] that are due to the desolate budgetary situation and are an expression of the low esteem for food. This financing has as much to do with a useful catering concept as the shell of a house has with its completion.

German school catering is thus without a uniform concept and is heavily dependent on the local circumstances. Like the famous needle in a haystack, you will find a well-functioning system here and there, which is then passed around as a "best practice example" at the relevant events. As if the German school catering could recover with such lucky coincidences! The fact is that the "wheel" has to be reinvented in every school and that it is difficult to determine at school conferences what the catering should look like. This participatory approach is desirable[10] because it is hoped that it will achieve broad support. The question arises, however, to what extent participation can be demanded without overburdening those involved.

To stop this development, a massive change of direction is necessary. The concept of school catering in Germany must be completely reinvented and put to the test first. Continue like this cements the status of German school catering at a low level.

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7 BMEL (Hrsg): Qualität der Schulverpflegung - Nationwide survey. Final report. 5.2015. www.in-form.de

8 Arens-Azevèdo U, Tecklenburg ME, Alber R: Implementation of qualitystandards in school catering - An assessment of cost structures. Hamburg University of Applied Sciences, January 2010, 50 p.

9 AG Schulessen: School meals at Berlin primary schools. Info AG Schulessen LEA Berlin 1. 24.9.2014. www.lea-berlin.de/downloads/LEA_Information_Schulessen_in_Berlin092012.pdf, Access: 22.10.2014

10 Verbraucherzentrale und Vernetzungsstelle NRW (Hrsg): School eats healthy. Step by step to an optimal school catering. Mintropstr. 27, 40215 Düsseldorf, Febr. 2011. www.vz-nrw.de/ratgeber-schule, accessed: 20.10.2014

2.3.2 Special situation analysis

The evaluation of school catering should be about much more than just the quality of the food. Usually only the wholesomeness and the taste of the food are checked[11,12]. Through the "AG-Schulverpflegung" (AGS) of the Department of Oecotrophology with a community gastronomy-specific certification, the Niederrhein University of Applied Sciences has developed an instrument[13,14] with which the situation can be assessed much more comprehensively. The instrument has been continuously further developed and is used in cooperation with TÜV Rheinland for the entire area of community gastronomy. Several studies have been carried out, one together with the Consumer Centre and the NRW Consumer Ministry[15], another in cooperation with the State Parents' Association of Grammar Schools in NRW[16].

In the second study with grammar schools, it turned out that frequently (approx. 80%) quite essential requirements, so-called Cat 3 questions, were not fulfilled and that these schools therefore could not even have been awarded the lowest quality category. You would have simply failed a certification attempt. Essential requirements must be met in order to pass the test at all, e.g. an acceptable hygieneconcept must exist. In some cases, up to six such essential claims were not met. If all schools had participated in this voluntary study, the diarrhoea rate would certainly not be 80%, but higher. The more than eight years of experience of the AGS of the Niederrhein University of Applied Sciences in school catering were thus fully confirmed[17,18].

The results for the schools are shown in Figure 3. Due to the many unfulfilled requirements of essential questions, it is very doubtful that the schools would be able to correct the serious weaknesses on their own. This concerns all essential areas, not just hygiene issues.

11 Kersting M, Clausen K, Krämer C: State survey on lunch in schools with all-day catering in NRW 2009/2010. Research Institute for Child Nutrition, Dortmund.

12 Zilz C: Bavaria: Study on school meals with light and shade. cafe-future, 10.10.2014. www.cafe-future.net/news/pages/Studie-zum-Schulessen-mit-Licht-und-Schatten_31533.html, accessed: 25.10.2014

13 Peinelt V, Wetterau J: The chef's hat certification. Presentation of the overall concept. Niederrhein University of Applied Sciences, Department of Oecotrophology, Rheydter Str. 277, 41065 Mönchengladbach, Germany, Booth: 9/2014

14 Peinelt V: "Excellent community gastronomy". Concept for certification in the community gastronomy. www.volker-peinelt.de/zertifizierung/ausgezeichnete-gg/

15 Peinelt V, Wehmöller D: Certification and auditing of school catering for selected all-day schools in NRW. Final Report June 2009, Niederrhein University of Applied Sciences, Department of Oecotrophology, 41065 Mönchengladbach, Germany

16 Peinelt V: School catering at grammar schools in NRW. Nutrition in focus, 13-09-10/13, 292-295. www.volker-peinelt.de/schulverpflegung/bestandsanalyse/

17 Peinelt V, Wetterau J: Experiences with the chef's hat concept tests at schools and day-care centres in Germany. Period 2007-2015 University of Applied Sciences Niederrhein, Department of Oecotrophology, Rheydter Str. 277, 41065 Mönchengladbach, Germany, Booth: 9/2014

18 Sonntag C: Essen in der Schule: AG Schulverpflegung presents results and hands over operational part to service provider. Press conference on 13.1.2012 at the University of Applied Sciences Niederrhein, FB Oecotrophologie, Mönchengladbach

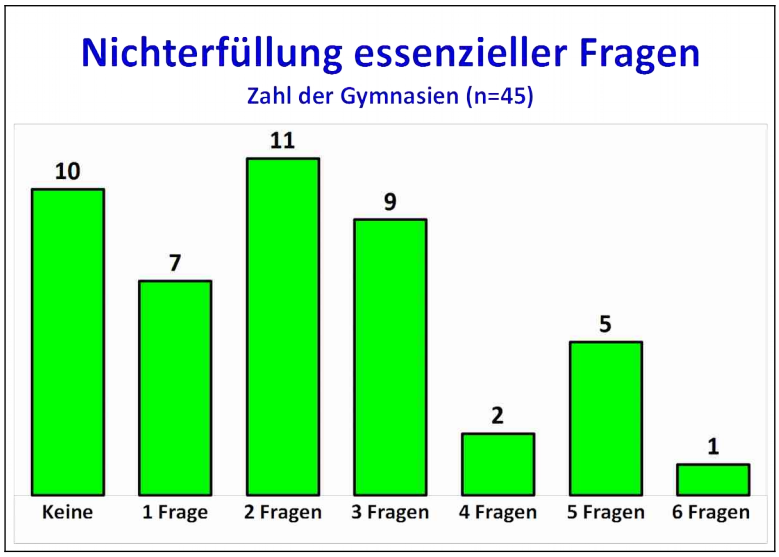

Fig. 3: Results of a study at grammar schools in NRW

It is not intended to go into the details of the many weaknesses of school catering, as these have also been shown in other studies in a similar way[19]. Fig. 4 summarises the experiences and test results. As always with bad results, there are also a few positive examples.

Although positive examples are rare, they can be found everywhere in Germany. They are characterized by extraordinary circumstances, e.g. that a lot of money is put into them and a lot of effort is involved at all.

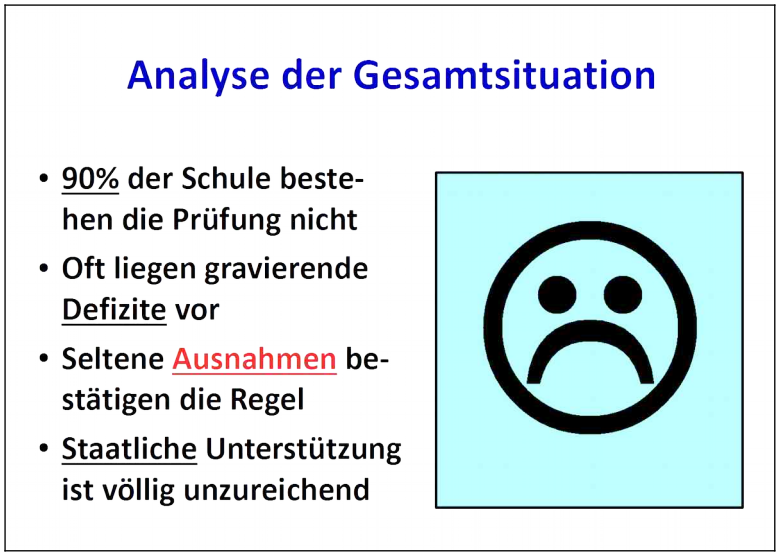

Fig. 4: Brief evaluation of school catering

2.4 Fresh or mixed kitchen ("self cooking")

The catering system used plays an important role in the success of school catering. The choice of a catering system should be based on the requirements and necessary conditions. In addition to high food quality and safe hygiene, this also includes personnel and financial requirements. If the decision in favour of a system is made only on the basis of price, there is a high

19 BMEL (Hrsg): Qualität der Schulverpflegung - Nationwide survey. Final report. 5.2015. www.in-form.de

probability of significant weaknesses in school catering. For this reason, the various catering systems (Fig. 5) are discussed in more detail, with the implementation conditions in particular to be examined more closely from a German perspective.

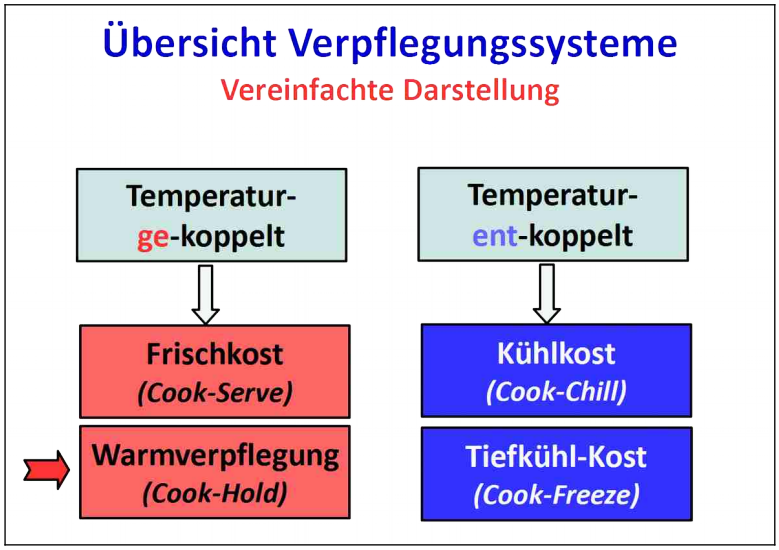

Fig. 5: Common catering system in the community gastronomy

The focus is on the so-called fresh food, which is desired by most people and is also the characteristic of the Lafer system. The *question is not whether something like this is possible at all, but whether the implementation of the Lafer system could in principle be implemented throughout Germany.*

One can say that all systems can achieve good results in the ideal case. But too little is asked about whether and to what extent the necessary requirements for the respective systems can be met and to what extent the price sets the course. Fig. 5 shows an overview of the current catering systems.

The specific conditions in school catering are dealt with here in order to compare the requirements of the systems. Factors play a role here that do not exist to this extent in other areas.

Usually we speak of "fresh cuisine" when freshly prepared. However, these are usually also ingredients that have been preserved, e.g. frozen goods. Therefore, the term "mixed kitchen" is actually more appropriate. The term "self cooking" is also frequently used. The technical term is "Cook and Serve". Whatever this kitchen is called, there are high demands to be met in several respects. Very well qualified personnel is crucial for this system. Also a versatile equipment must be available. Also think of the elaborate HACCP concept, optimal cooking methods or recipes suitable for pupils, which should be available in every school.

The evaluation focuses on the **personnel** required and the **costs**. This is expressed in Fig. 6.

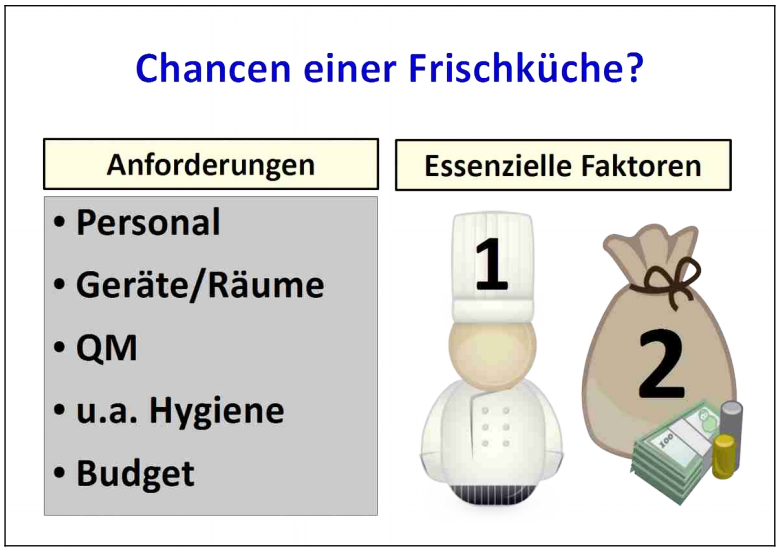

Fig. 6: Requirements for a fresh kitchen

Unfortunately, the work processes are often criticized because, for example, the food is finished too early and then kept warm for a long time. Self cooking is also the most expensive option, mainly due to the low participation in the meal and the high fixed costs. In some other countries, on the other hand, the participation in eating is very high, e.g. in Japan, where all students and teachers have to participate in eating, so that this system is associated with low costs. Lafer achieves good results in Germany.

In the "Römerkastel" grammar school in Bad Kreuznach, Johann Lafer runs a school kitchen with his fresh food, which is supported by the state, the city and the Fulda University of Applied Sciences. The aim of this project is to show how successful school catering can work. It is therefore a pilot project with the aim of ultimately implementing this throughout Germany. Therefore, it will be examined below whether the "Lafer system" has what it takes to be introduced throughout Germany (Fig. 7).

Fig. 7: Positive example of school catering

2.4.1 Staff

Let's start with the personnel. The number of completed training contracts and the dropout rate are very unfavourable for prospective cooks. As a consequence, there is a considerable shortage of skilled workers, which will continue in the coming years.

Fig. 8: Problems of the young generation in the community gastronomy

It can be assumed that the few new skilled workers who have successfully completed their apprenticeships will not apply preferentially for school catering.

The reasons for this development, which has persisted for years, are manifold. Even if it were possible to reverse this negative trend, young people would have to be motivated to work in school catering. Further training activities would also have to be developed for this area, as special knowledge, e.g. about suitable recipes, is required for this. Basically, all of this should be targeted and not left to the interplay of randomness in the labour market. Japan has been showing us what this could look like for over 60 years (Fig. 9).

Fig. 9: Education and training programme in Japan

As can be seen in Fig. 9, Japan has a very differentiated education and training system. This makes it possible to employ highly qualified specialists in every school. In addition, there is also provision for specialists in the classroom.

2.4.2 Expenses

The costs will now be discussed in more detail, as they are the focus of every tender in Germany. They are strongly dependent on the number of guests in the fresh kitchen. The costs per lunch are relatively high for the mostly low participation rate in schools (Fig. 10).

In secondary schools, very few students attend meals, often in the order of 5-10%, i.e. normally only up to 100 students have lunch. Thus the full costs can be estimated with approx. 7 euro. Since the parents themselves "only" pay about 2,50-3,50 Euro per meal and are not willing to pay more, the rest has to be subsidized. The school authorities are often not in a position to do this. A subsidy of 3,50-4,50 Euro per meal is not granted by politics.

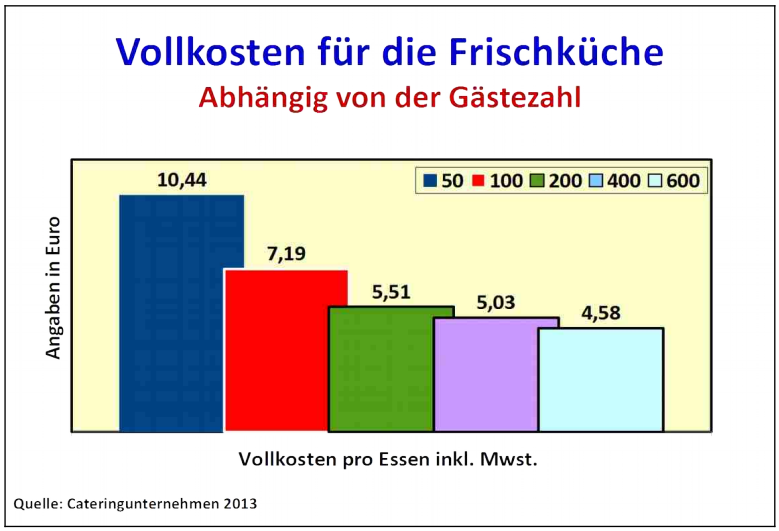

Fig. 10: Full cost of lunch depending on the number of guests

This reluctance to pay has something to do with the appreciation of food. Here, other countries are acting in exactly the opposite direction. In France, for example, food costs about 10 euros, of which the state pays about two thirds, because a full and attractive meal is of great value to society[20]. It cannot be repeated and stressed often enough that such an investment, as it can be observed in different countries, promotes the development of a quality awareness of food and shapes people throughout their lives.

Also in Germany the full costs can be similarly high as in France, even with a large number of participants. This has resulted in a serious evaluation of the costs of the Lafer system (Fig. 11)[21]. The parents pay only 3,10 Euro, the city participates with 1,10 Euro and the rest, after all 5,18 Euro, is taken over by the country.

This will be sustainable for some time as it is a pilot project. After that, the land will be released, so that the costs will only be borne by the municipality and the parents. Since pa-

20 Healthy and tasty through childhood. ARTE programme X:ENIUS - the knowledge magazine. Broadcast on 25.9.2014 at 8.30 h and at 17.05 h. www.arte.tv/guide/de/051094-022/x-enius, accessed: 14.10.14

21 Schöffel L: 20 cents more for Lafer food. Allgemeine Zeitung, Bad Kreuznach district newspaper, 4.9.2013. www.allgemeine-zeitung.de/lokales/bad-kreuznach/landkreis-bad-kreuznach/20-cent-mehr-fuer-lafer-essen_13393923.htm

rents are hardly prepared to pay any more, the question is whether a municipality will pay the entire subsidy of 6.28 euros in the long run? The other schools in the city will then certainly demand similar subsidies. This can only be expected from the public sector if the costs appear to be a sensible investment. Such an attitude is unfortunately lacking in Germany. For the parents, the "pain threshold" is usually 3.50 euros for lunch, in large cities sometimes a[22]little higher. This is supported by latest figure[23]. On the other hand, there is money for many things whose necessity can rightly be questioned, e.g. for expensive smartphones or their tariffs, various other electronic devices or a car for the offspring.

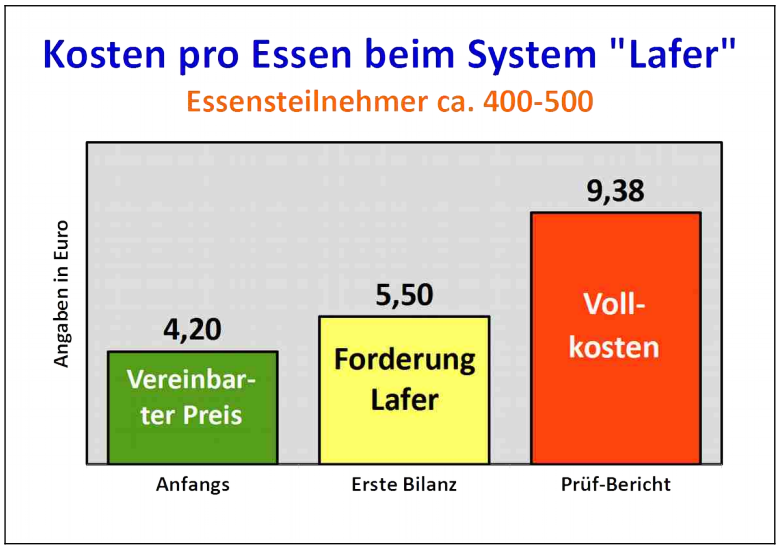

Fig. 11: Full costs of the Lafer system

In the private sector, money is better spent on other things than on good food. Nor is the state prepared to spend the modest amount on subsidising school meals (Fig. 12). In 2018, the BMEL commissioned another study to determine the cost of lunch in schools. The results presented there are largely unusable, which was explained in detail in an opinion[24].

22 Peinelt V: Experiences within the scope of a study for school catering in the district of Marburg-Biedenkopf by the Niederrhein University of Applied Sciences in the period 9/2011 to 6/2012. Niederrhein University of Applied Sciences, Department of Oecotrophology, Rheydter Str. 277, 41065 Mönchengladbach. www.volker-peinelt.de/schulverpflegung/loesungen-fuer-deutschland/

23 BMEL (Hrsg): Qualität der Schulverpflegung - Nationwide survey. Final report. 5.2015. www.in-form.de, p. 19

24 Peinelt V: How much can a lunch cost? Statement on the BMEL study on school catering 2018. www.volker-peinelt.de/schulverpflegung/kosten-fuer-mittagessen/

Fig. 12: Priorities of private and public spending

Ultimately, politics carries out the will of the people. Instead the state prefers to pay the child-care allowance for families who do not bring their children to the nursery and prefer to "educate" them at home, which will cost around two billion euros per year in the final stage of expansion. That this law was stopped by the European for Germany, Bavaria cannot dissuade from the care money. Another example is luxury cars, 80% of which are purchased by companies and can be depreciated for tax purposes without a purchase price limit. This entails tax losses of around nine billion euros[25].

Fig. 13: Feasibility of the "Lafer System" in Germany

2.4.4 Conclusion Fresh Kitchen

Thus the two essential prerequisites, the personnel and the cost question, for the fresh kitchen were dealt with. It has been shown that in Germany neither the personnel requirements can be covered nor the willingness to pay on the part of the private or public sector is sufficient for this catering system. Therefore, the answer to the question as to whether fresh cuisine ("Lafer

25 Deutsche Umwelthilfe: DUH demands for ecological reform of company car taxation. Background paper of 23.4.2013. www.duh.de/uploads/media/Hintergrundpapier_Company car taxation_2013-07-03.pdf, accessed: 14.10.2014

system") can be implemented throughout Germany can only be as follows: NO. Fig. 13 summarizes this once again.

2.5 Hot cateringsystem (" Cook and Hold ")

2.5.1 Conditions in Germany

Since the system in Germany, which is desired by most and also supported by the state as a pilot project, cannot be implemented, we now want to deal with the standard system for school catering. Hot meals are preferred because they cost the least at school. Neither the personnel nor the equipment have to meet high requirements. Unfortunately, this system usually has a serious disadvantage: the long holding time. It can be up to six hours. Fig. 14 shows how this can be explained.

For reasons of cost, only a few vehicles are used that have a long route to cover. This means that the tour has to start early and the first schools receive lunch in the course of the morning, well before dinner time. There are known cases where the food was already delivered at eight o'clock[26]! These extremely long heating times lead to a dramatic decrease in the quality of the food, combined with hygienic risks, as the temperature of at least 65°C is not always properly maintained during such long periods. Then there is the danger that spores germinate and an LM infection or LM intoxication occurs. It goes without saying that such foods are of such poor sensory quality that the participation of food in them remains low.

In particular the large delivery radius in connection with few, large vehicles, the renouncement of batchwise production in combination with corresponding multiple exits lead to low costs. Fig. 15 summarises the causes and consequences of the poor quality of hot meals.

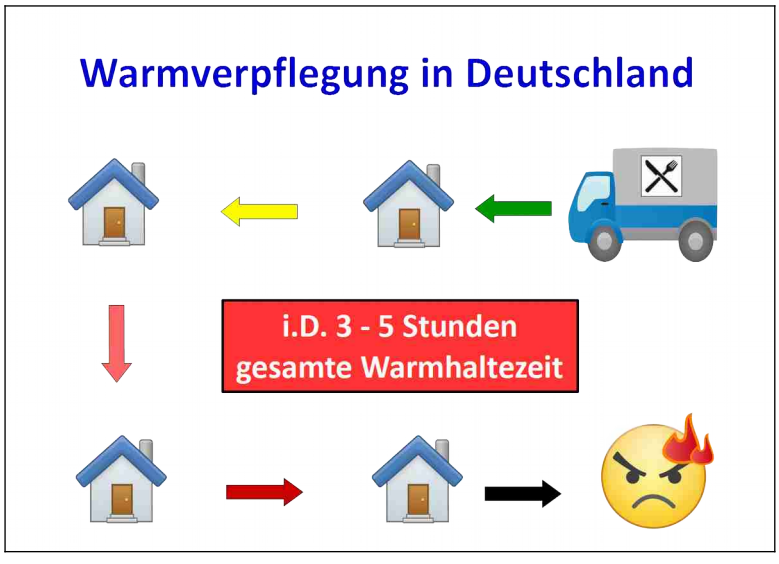

Fig. 14: Delivery of hot food to schools in Germany

26 Peinelt V: Personal communication from a school catering provider who had direct contact with the authorities. January 2014.

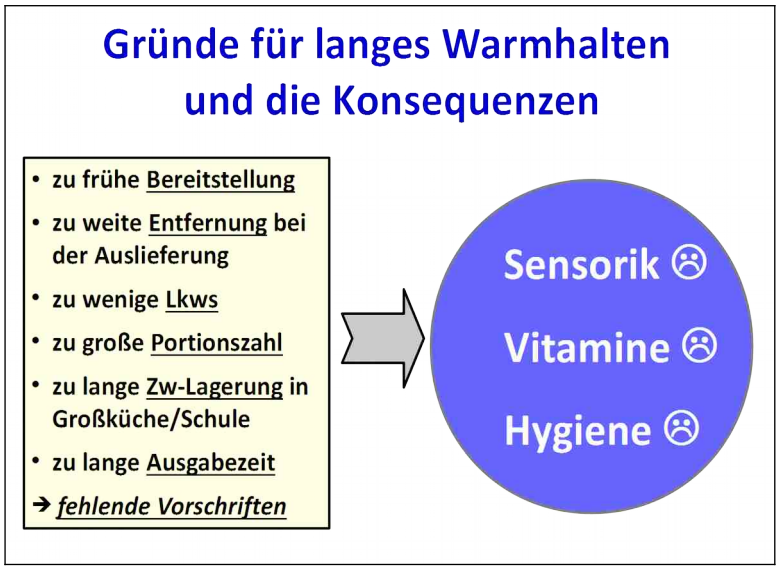

Fig. 15: Reasons for the usual hot meals and their consequences

2.5.2 Optimization of the system and its obstacles

All these unfavourable circumstances would have to be removed in order tospeak of good quality in the Cookand Hold case. That this is possible is again shown by the Japanese conditions (Fig. 16). There is a different organisation here, above all other requirements which must be strictly adhered to. These changes in production in the central kitchens as well as in the entire logistics and the associated higher number of vehicles and drivers naturally lead to rising costs. And these cannot be passed on to customers in Germany. Here, too, the parents and the school authorities would have to bear these costs, but this is not to be expected.

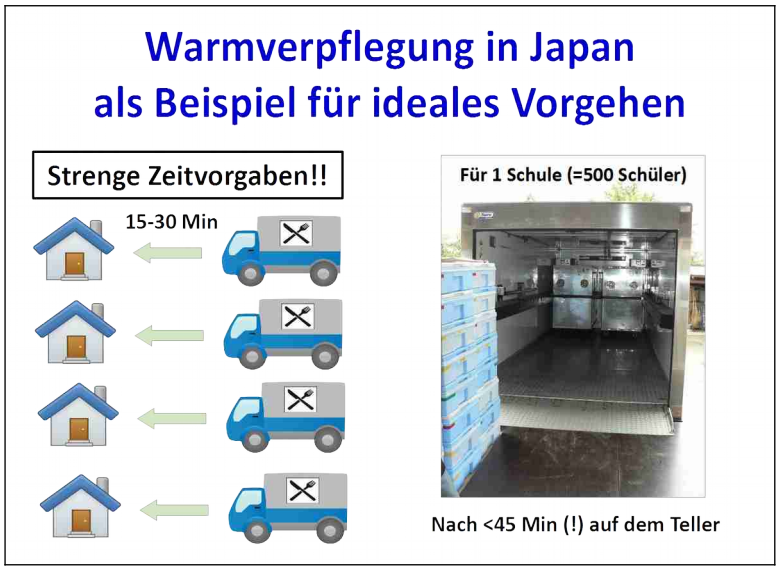

Fig. 16: Hot meals in Japan

Anyone who has dealt with tendering procedures and public procurement directives knows that price is the dominant factor in these procedures. Quality always plays a subordinate role, whereby quality is usually understood only as sensory quality. Strict specifications for the holding time are therefore necessary. Unfortunately, the state in this country - unlike Japan - is

not prepared to make this mandatory. The specifications in the DGE qualitystandards are merely recommendations, just like the specifications in the corresponding DIN standards (here: DIN 10508[27]). Other organisational changes that would be necessary in the school are added. It would be worth considering taking the food in class, because this would greatly contribute to reducing the heat holding times. Although this works excellently in Japan, a transfer to Germany would be difficult, which was discussed in detail in a special publication[28]. Fig. 17 shows important measures to optimise hot meals in Germany.

Only the sum of all these changes, including the legal requirements and strict controls, would make hot meals acceptable. It does not take much imagination to imagine that this is not feasible in Germany. Neither the parents nor the school authorities should be prepared to support the higher prices for lunch. Everything would therefore remain the same if the state did not specify how long the food was to be kept hot, starting from the time it was ready. In Japan, this is a matter of course, and these times are strictly observed and controlled by rigorous management.

Fig. 17: Necessary measures to improve hot meals

In the tender documents, however, in many municipalities suppliers are required to adhere to short times (sometimes only up to 2 hours). However, such a requirement is completely worthless if it is not reviewed. The author himself offered a local authority a free review of the heat retention times in the context of a course with the help of students after completion of the award procedure, in which the hot meals had come into play. This municipality has not even responded to the offer, which shows a complete lack of interest in such a review. The question therefore arises as to whether the entire award procedure - without examining the commitments - is not ultimately a farce or a bad theater (Fig. 18).

27 DIN (Deutsches Institut für Normung): Food Hygiene - Temperatures for Food. DIN 10508:2012-03, 3/2012, 13 S.
28 Peinelt V: Publication School Catering Japan. www.volker-peinelt.de/schulverpflegung/internationaler-vergleich. s. Kap. 6.6

Fig. 18: Compliance with assurances given at awarding authorities

2.5.3 Conclusion Hot meals

If the state were really serious about good school catering, it would have to decide on a few simple but effective measures for hot meals. These would mainly be the specification of short holding times and strict control, combined with harsh sanctions if the contractual agreements are not complied with. Why are these measures not being adopted? What's stopping the state? Is it disinterest in the topic, consideration for the wishes of incompetent producers or ultimately only the expression of the low esteem for food? In any case, this catering system is out of the question under the circumstances prevailing in Germany.

2.6 Temperature decoupled production systems

2.6.1 Description of the system approach

If the two temperature-coupled systems are unsuitable for German conditions, only the decoupled systems remain. These will be examined in more detail below. Fig. 19 shows an example of how the "Cook and Chill" system works.

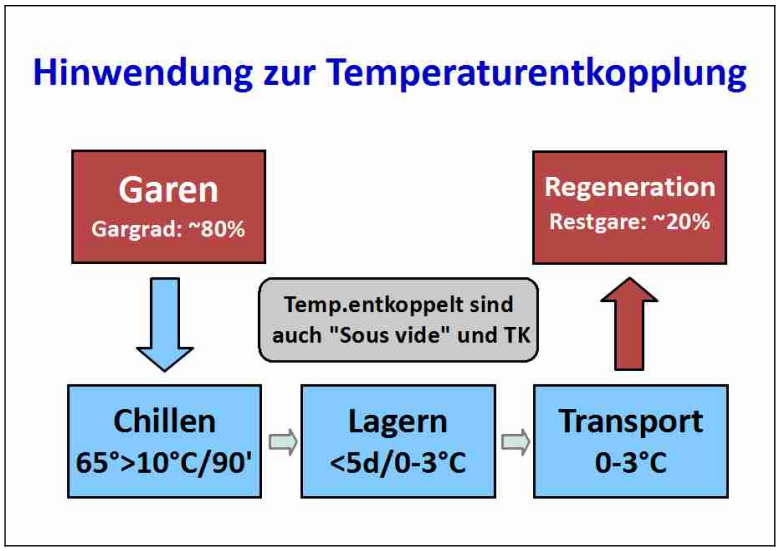

Fig. 19: Schematic sequence for temperature decoupling

In principle, the temperature decoupling can be carried out in the company itself, i.e. in the school, or the food produced can be purchased externally (Fig. 20).

Own production is only recommended if other schools are supplied from there. Thus this school would be a central kitchen for the supplied schools. The production of "Cook and Chill" meals requires very good know-how, which is usually not available in school kitchens. Therefore, only the central kitchen model is assumed here, whereby the schools only have so-called preparation kitchens (see Fig. 20). The discussion will initially again focus on the two factors "personnel" and "costs", but will also include other aspects.

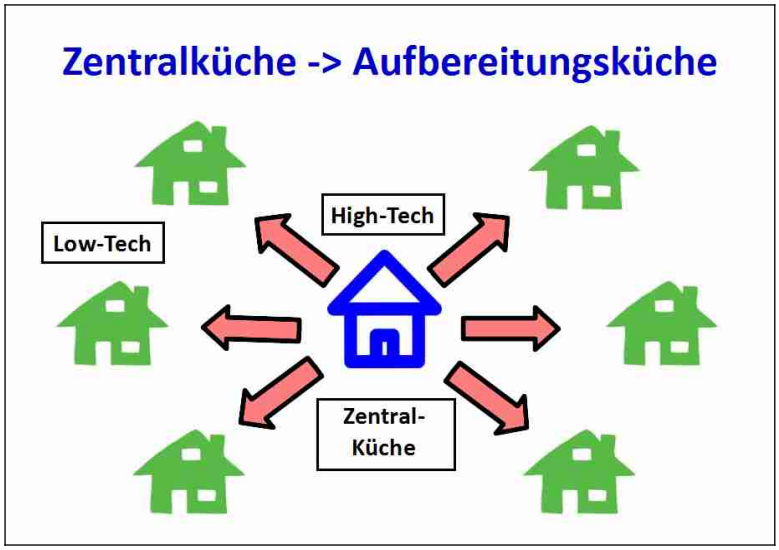

Fig. 20: System of composite certification with temperature decoupling

2.6.2 Staff

In the schools there are so-called preparation kitchens. For the work in these kitchens no particularly qualified specialists are necessary. Due to the low qualification requirements, the kitchen staff in the schools can also be recruited through retraining measures, which was suc-

cessfully tested in a Hessian district[29]. The AGS, Department of Oecotrophology of the University of Applied Sciences Niederrhein, developed[30]a QM guideline, which should be used for the training measures as well as for the daily work in the schools with preparation kitchen. Ideally, the people in the school kitchens are employees of a full-service provider who are assigned, trained and controlled by them. In any case, the responsible service provider must have the authority to issue instructions to the employees for successful work.

Unfortunately, the situation at the schools is often different because the service staff is provided by the municipality and therefore there is no authority to issue instructions. This also has something to do with the quality-inhibiting value added tax, since the increased value added tax rate of 19% is demanded from the service provider if he not only delivers the food (7%), but also distributes it. But exactly this service "from one casting" with training and control of the employees would be the optimal solution. Due to the increase of the price by 30-50 Cent (12% from 2,50-4,00 Euro) this variant is chosen however reluctantly, whereby one accepts quality losses. Despite years of protests, there has still been no change in the VAT rate. The state thus contributes to deteriorating the quality of school meals. A change is not in sight.

2.6.3 Expenses

A look at the costs of this system shows that there are clear advantages in favour of temperature decoupling here as well. Fig. 21 shows only the comparison of temperature-decoupled systems with the fresh kitchen.

Hot meals may be cheaper, but due to the unacceptable quality and the lack of optimisation possibilities in Germany, this system should no longer be used and is not taken into account when comparing costs. The fresh kitchen can only reach a similar level of costs as the temperature-decoupled systems if there is a large number of participants at the meal. As already mentioned, this figure is far from being reached in Germany and will not be achieved for an unforeseeable period of time due to the lack of compulsory consumption. Therefore, the cost per lunch in the fresh kitchen is 50-100% higher.

29 Kirchner C: Relying on auxiliaries. Final report on the concept of school catering in the district of Marburg-Biedenkopf, GVmanager 9/12, p. 42. Available for download: https://www.volker-peinelt.de/schulverpflegung/loesungen-fuer-deutschland/

30 Peinelt V, Rademacher U, Meusel U: Quality management guide for kitchens used for serving and preparation. In all-day schools and kindergartens. With CD-Rom and documentation forms. Niederrhein University of Applied Sciences, Department of Oecotrophology. Rheydter Str. 277, 41065 Mönchengladbach. Shaker-Verlag Aachen, 2010, 55 pp. plus 36 pp. appendix

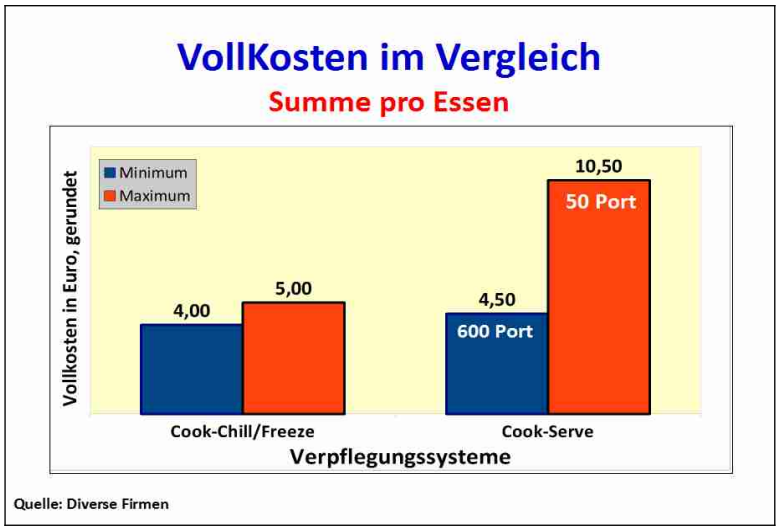

Fig. 21: Comparison of full lunch costs

2.6.4 Nutritional and sensory quality

In addition to the easy to meet personnel requirements for these systems, there is the outstanding quality of the sensor technology as well as the preservation of the nutrients. Here only the characteristic illustrations are to be shown briefly.

Fig. 22 shows the preservation of vitamins by means of the most sensitive representatives. With "Cook and Chill" these vitamins can be preserved as well as if the food is kept hot for 1-2 hours. Such a short holding time is practically never achieved by warm food. Fig. 23 below shows the results of sensory examinations. For the warm catering system, the results were determined for two times. It's more like four hours than two. In line with the results for vitamin preservation, the sensory results of warm food, even after only two hours, are lower than those of cook and chill.

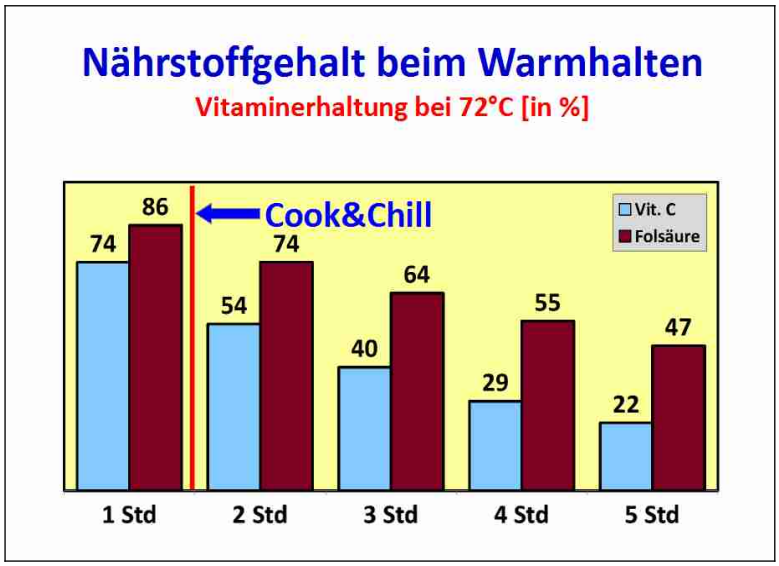

Fig. 22: Preservation of heat-sensitive vitamins[31]

31 Williams PG et al.: Ascorbic Acid and 5-Methyltetrahydrofolate Losses in Vegetabels with Cook/Chill or Cook/Hot-Hold Foodservice Systems. Journal of Food Science. 60 (1995), Nr. 3, 541-546

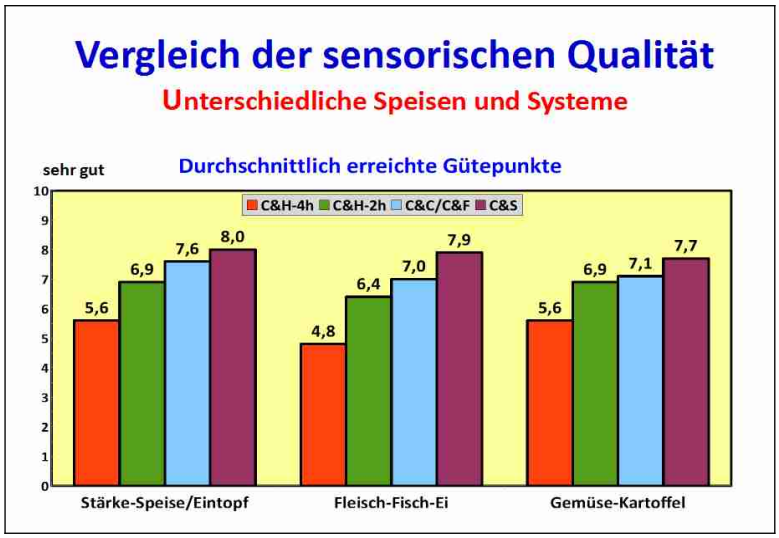

Fig. 23: Comparison of the sensory quality of different systems[32]

The reference is the fresh food, which is however de facto in practice none, so that the highest values in the school catering are actually unrealizable. They are only slightly above the values of " Cook and Chill". By the way, the values for " Cook and Freeze" are similar.

2.6.5 Advantages of temperature decoupling for preparation

Various advantages of temperature decoupling will now be presented, initially for the ***preparation*** (see Fig. 24). Due to the small amount of remaining work for food preparation in the school, where only one preparation of the food and a short holding of heat are necessary, the hygienic requirements can be fulfilled well. For this reason, it is possible to employ semi-skilled employees. The temperature decoupled systems do not only have clear advantages with regard to the above mentioned properties as well as the costs. There are also obvious advantages in terms of preparation and for the target groups at school.

The system comparison led to the conclusion that hygiene can be better controlled with temperature decoupling than with coupled systems. In spite of everything, the mass applicability of a system must not be lost sight of. Especially because of the recommended central kitchen model with preparation kitchens, large-scale implementation throughout Germany is possible in a relatively short time.

32 Bognàr A: Quality of warm food. Food in focus 6 (2006), Issue 01, 2-8

Fig. 24: Production advantages of temperature decoupling (© Rational)

Thus the advantages for the production are obvious. So far, no serious arguments have been put forward against it. The temperature decoupled systems are however somewhat more expensive than the cheap warm catering and require also a higher apparativen expenditure as well as certain installations, which also causes the costs. However, this additional effort is easy to achieve with good will. The assertion that the temperaturdecoupled systems have a considerably higher energy requirement is untenable. In some circumstances, the opposite may even be true, namely when the system is used holistically.

2.6.6 Advantages of temperature decoupling for the target groups

Let us now look at another aspect: the advantages for the ***target groups***. These are all those who benefit from food, i.e. students and teachers. One of the main advantages of professional work is that the teachers involved in the organisation are relieved of their workload. Still today many teachers, up to the headmasters, are busy with the small stuff of the organization. This goes so far that they have to take care of the recruitment and supervision of the personnel.

Other cases are known where the headmaster had to arrange for the purchase of a combi steamer and was therefore eager to browse through trade journals. It is easy to calculate how effective this work is. Without expert advice, changes or even the replanning of a system are largely meaningless. But for a professional planning usually the money is missing. Such time wasters for teachers have to be stopped urgently! If the production and expenditure were outsourced, i.e. no more activities could be organised in the school, the time gained could be better used for nutrition lessons and other meaningful things. Fig. 25 shows the advantages for the target groups.

Fig. 25: Target group advantages of temperature decoupling

Even in the case of a complete award, there is still scope for influencing the quality or selection of food, especially via co-determination in the Mensa Council. And these should also be used intensively, with pupils and parents being represented in addition to the service provider and the teachers. With such a system, quality can be permanently assured, whereby certification is another important component.

2.6.7 Conclusion for temperature decoupled systems

The presentation of temperature-decoupled systems has shown that there are advantages at all levels and that no serious objections can be raised against the nationwide introduction of these systems in Germany. What matters now is that this insight be generally accepted and that the necessary consequences be drawn from it.

2.7 Decision and implementation

The evaluation of the classic catering systems for school catering in Germany has therefore shown that temperature-decoupled systems are the most sensible option. Even if in principle all systems can deliver good results, it is hardly possible to meet the requirements for temperature-coupled systems, especially in school catering. This is summarized once again with some comments.

The ***fresh kitchen*** lacks personnel, especially qualified personnel. If this were to be changed, a process would have to be organised which would last for decades to promote young people and also take into account the specific needs of school catering. This was possible in Japan. However, even after 60 years, they have not yet reached their self-imposed goal. There, qualified kitchen specialists, who undergo continuous further training, work together with oecotrophologists and nutrition teachers in every school. Nutrition is a teaching subject and is closely linked to lunch. This was possible in Japan because there is a national school catering regulation that is applied throughout the country.

This alone would not be possible in Germany at present, because education is a matter for the Länder and school catering is therefore also a matter for the Länder. Apart from this hardly

feasible personnel development plan, high investments would be required for the equipment in every school, which is particularly high in the fresh kitchen. Even if there may be positive individual examples, promoting this system is the wrong way because it cannot be taken by many, and the individual examples all too often show that sustainability cannot be achieved with it. It does not help school catering if local activists and politicians persist in unrealisable wishful thinking. So what use is it if lighthouse projects are launched but politicians refuse to provide answers to the questions raised here?

In principle, ***hot meals*** could be a sensible solution, but not in Germany. Unfortunately, it still accounts for the lion's share of all school meals. It is the cheapest option under the poor framework conditions and requires the lowest expenditure and qualifications of personnel on site, i.e. in the schools. It is apparently more important for Germany to get cheap food in schools than to pay attention to a good level of quality. Then hot meals will not change either, but they would have to do so to a considerable extent if they were to be qualitatively acceptable. If food were more valued in society, joint efforts for better quality would be a matter of course. The question then would not be what the maximum price should be, but how the necessary price and the associated measures for good quality can be financed. So the approach would be exactly the opposite.

Hot meals would then, but only then, have a raison d'être, whereby the changes would have to be enforced by the legislator for high quality. This would have to be done in particular by specifying short holding times (including strict controls), which would lead to a significant increase in costs due to various organisational changes. Such a requirement would, however, no longer be perceived in society as an undesirable constraint, since a high standard of quality would then be anchored. But we don't have this company in Germany! A change of appreciation towards a better food would take decades and would have to be consistently initiated by many measures, such as obligatory nutrition lessons until the end of middle school as well as high-quality catering in day-care centres and schools. Then one can hope that the later adults will no longer allow themselves to be presented with every meal.

With the ***temperature decoupled systems,*** we would have a compromise that combines high quality with moderate costs. These systems require few and low qualified personnel, who can be recruited by retraining. They can also be implemented relatively quickly, as production is possible in a few central kitchens that already exist, could be easily expanded if necessary and only need to be added in manageable numbers. Of course, local investments would also be necessary, but less than for full kitchens. Basically, these are only initial investments for cold stores and regeneration equipment, which are not very high.

All three ways - fresh kitchen, hot meals and temperature decoupling - are therefore possible, but with different effort and time horizon. Politics must decide, unfortunately currently in all federal states. A rational decision will prefer the temperature decoupled systems.

However, optimal development does not happen by itself. Here support measures from the state are necessary, e.g. the granting of financial advantages when the old system is converted. Similarly, the State should contribute to facilitating the changeover through broad-based trai-

ning. After all, many service providers who are still active in the hot meals business would like to switch if they could be helped, and they would know how to do this best. The networking bodies would also have a useful role to play here. Last but not least, the system is characterised by moderate costs (see Fig. 21), which would also contribute to rapid dissemination if the state so wished.

2.8 Control of services

Even the most convincing arguments for a particular catering system will not deter many from their own system, as they often feel that it works quite well *cum grano salis* and therefore does not need to be changed. Even if it were possible to force the switch to a uniform system for the whole of Germany, this would certainly not be a good strategy. The resistance would be too great because the school community would most reluctantly part with "their" system, however good the arguments against it may be. This could [33]be observed within the scope of a study of the AGS of the Niederrhein University of Applied Sciences. Although the results of the study for the temperature decoupled system at two pilot schools were quite good, suggesting a general introduction, the other schools could not be persuaded to switch to this system. Two schools swore particularly by "their" fresh food system, which depended above all on the great commitment of very few people. Even free reviews of these specific solutions were rejected by the schools and the school authorities did not want to force this. If this is not possible in a "small" administrative district, how much more difficult would it be to try to order a changeover for the whole of Germany, and even across national borders?

A different approach should therefore be adopted. Every school should be obliged to undergo an examination. Of course, this also applies to the central kitchens that supply the food. Such a certification obligation would give every school the opportunity to prove that its system, as exotic as it may be, is in order. This would legitimise a continuation of this system. One would therefore not need to justify oneself because of one's possibly unorthodox approach. Every school should agree to this. Otherwise, if the school-specific concepts are accepted without any examination, the information is missing and there is room for improvement. A stocktaking through a review, combined with an obligation to optimise, is therefore basically "without alternative". Fig. 26 shows the statements on the certification obligation.

33 Peinelt V: Final report of the project in the LK Marburg-Biedenkopf. www.volker-peinelt.de/schulverpflegung/loesungen-fuer-deutschland/

Fig. 26: The promised benefits must be checked

In addition to the question of the scope of such verifications, there is also the question of the quality of implementation. Of course there is a difference whether the persons in charge of an audit are still in training or whether experienced and permanently trained auditors with a completed and recognised training as QM auditors, e.g. by TÜV Rheinland, carry out the audits. The fact that a certification provider offers[34]this at extremely low prices (100 euros) raises the question of the extent to which European law is sufficiently respected here. Since 1 January 2009, separation and full cost accounting has been required under Article 87 of the EC Treaty[35]. State aid for economic activities is therefore no longer allowed as it may distort competition in the common market.

After the analysis of the current situation, however, there must also be consequences. First, each school should try to correct the mistakes itself, and then take another examination. If it then turns out that school catering cannot be certified despite improvements, further measures should be mandatory. The search for suitable solutions will show more and more that the requirements can be implemented most simply and cost-effectively if the central kitchen model with preparation kitchens outlined above is applied, i.e. temperature decoupling. This kind of persuasion is much better than the instruction from above without a test.

An important question will arise here, namely which system should be used for this review. In order to carry out a comprehensive review covering at least all essential areas, it is not sufficient to restrict oneself to fullness, as is almost exclusively the case with the DGE qualitystandards audits. As shown in the already mentioned study of the AGS of the Niederrhein University of Applied Sciences with approx. 60 grammar schools in NRW, there are[36]often serious weak points which are easily overlooked in a check primarily focused on fullness. Unfortunately, in many cases the responsible veterinarians or LM inspectors have overlooked some serious mistakes, such as a complete lack of hygiene concepts.

In this respect, the argumentation that it would be sufficient to leave the control of hygiene to others is not valid, which is why it is omitted in the review of school catering within the frame-

34 Institute for Health Promotion in Education e.V.: Navigation nutrition quality. www.institutfgb.de
35 Wabeco: Fundamentals of public funding measures in the Federal Republic of Germany. Version: 05/2011. www.wabeco.de/pdf/foerder-grundsaetze_en.pdf
36 Peinelt V: School catering at grammar schools in NRW. Nutrition in Focus, 13-09-10/13, 292-295 Study: Methodology and Results.www.volker-peinelt.de/schulverpflegung/bestandsanalyse/

work of the qualitystandards of the DGE. It appears that these checks take place to very different degrees from country to country. TÜV Rheinland's certification is a testing instrument for all important areas addressed by the DGE qualitystandard. Therefore, it would be advisable to prescribe a certification at least with the requirements of the certification by TÜV Rheinland. Ideally, the state would once capture those concepts that have these minimum characteristics. So far, only DGE certifications have been accepted, but for the above-mentioned reasons they are not sufficiently verifiable. Important areas are left out[37].

If a country takes the certifications into its own hands, then they should be based on the same high standards. Such an examination was set up e.g. in Berlin in 2014[38]. It can be assumed that the complete range of testing instruments had to be newly developed for this purpose. The effort involved in such a review concept, from checklists to auditor training, is easily underestimated. Fig. 27 shows some characteristics of the certification concept "Excellent community gastronomy" .

The Niederrhein University of Applied Sciences has been working together with TÜV Rheinland since mid-2014. The know-how of two experienced players was combined in this way. On the one hand, the Niederrhein University of Applied Sciences contributes its knowledge of the requirements in many areas of the community gastronomy, especially in the area of school catering. It should be noted that the university's own standards for school catering were developed and applied long before the DGE standards were published. On this basis, the various testing instruments were developed which were subject to a "Continuous Improvement Process" (CIP) and are still subject to it. TÜV Rheinland is very experienced in the field of certification. Furthermore, TÜV Rheinland is accredited, a qualification that is unlikely to be found in any other testing organisation in this field.

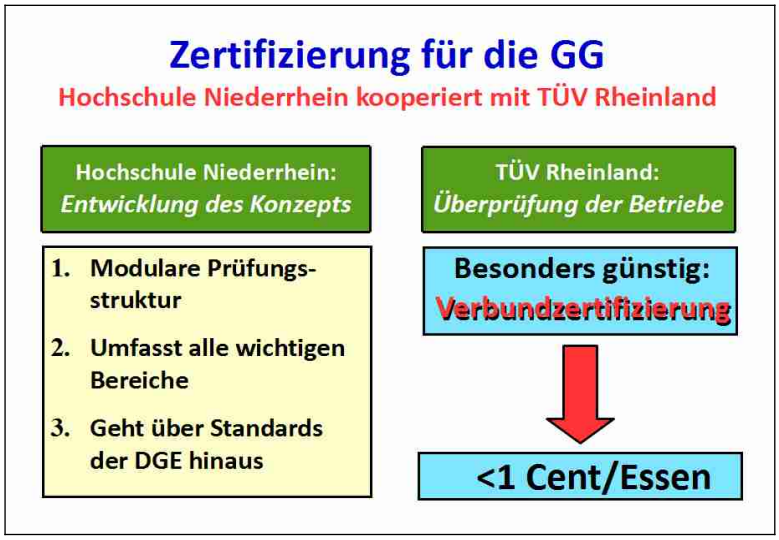

Fig. 27: Certification of school catering, TÜV Rheinland - Hochschule Niederrhein

Some may fear that this service will become too expensive, as TÜV Rheinland is not a charitable organisation. However, this is a misjudgement. The costs have been accurately calculated

37 Wetterau J, Peinelt V: Certification and quality seal. www.volker-peinelt.de/zertifizierung/zertifikate-guetesiegel/
38 AG Schulessen: School meals at Berlin primary schools. Info AG Schulessen LEA Berlin 1. 24.9.2014. www.lea-berlin.de/downloads/LEA_Information_Schulessen_in_Berlin092012.pdf

for various cases[39]. In the most favourable case of group certification, where a central kitchen, a central coordination unit and all participating schools are audited according to a recognised procedure (with an annual audit), the **cost of lunch** is **less than one cent**. In this respect, any fear in this direction is unfounded, as such a small amount requires no discussion.

3. Further subgoals

3.1 Participation

The concept of participation, i.e. participation in the concerns or tasks surrounding school catering, must answer two questions:

a) Who participates?

b) Which tasks are to be processed?

Invitations to participate in the school community are usually to be understood as if it would be best if as many people as possible were involved in all conceivable school catering tasks[40]. This includes production and other operational aspects of the service. Therefore, it is not uncommon to find laypersons preparing meals in school catering, and even high-ranking politicians sometimes praise cooking students. Such an approach overstretches the notion of participation.

Firstly, cooking with lay people fails to recognize the responsibility that exists for this activity and that lay people are usually unaware of - not even with regard to the legal consequences, by the way. And secondly, this shows a serious underestimation of the requirements for this work. Mothers who have successfully hosted many a party and birthday party now believe they can do the same for a few more people. Of course, there is nothing against a cookery lesson for pupils, as it should be given within the framework of the lesson. However, this is part of nutrition education and has nothing to do with the actual production for the school community. But it was precisely this sensible way of learning to cook, namely in small groups under expert guidance, that was continually reduced in the curriculum. This cannot be replaced by cooking on a grand scale while accepting the dangers involved.

In addition to the actual operations of providing the food, there are many tasks in which the school community can and should participate. The teachers and pupils are the main target groups, as they are naturally the most affected. But also the opinion of the parents is surely desired. Participation makes sense when it comes to co-determination, e.g. when selecting a caterer. However, the decision should not be made by the school community alone, but only after a thorough and neutral evaluation of the applicants. To choose this simply on the basis of a test meal would be like someone buying a car by appearance. The evaluation of a caterer requires expert knowledge and a comprehensive catalogue of criteria. The pupils and teachers are overwhelmed by this. Unfortunately, in many cases the choice is still made primarily according to price and tasting.

A say of the school community in the ongoing process is very much desired. There will always be complaints that have to be dealt with objectively. A good caterer will be grateful for con-

39 Peinelt V: Cost comparison of the systems. www.volker-peinelt.de/schulverpflegung/kostenstruktur/

40 Verbraucherzentrale und Vernetzungsstelle NRW (Hrsg): School eats healthy. Step by step to an optimal school catering. Mintropstr. 27, 40215 Düsseldorf, Febr. 2011. www.vz-nrw.de/ratgeber-schule, p. 26f

structive advice. The opinion of those concerned is also valuable when it comes to the design of dining halls, decoration, artistic enhancement or colour changes, etc. Last but not least, suggestions for campaigns and food planning will certainly be gladly taken up by competent service providers.

On the other hand, you shouldn't fool yourself: The willingness to participate is very weak among the vast majority of those affected. Parents' evenings, where the topic Mensa-Essen was at the top of the agenda, are characterized by yawning emptiness. The authors have experienced this for themselves with two examples.

- In a comprehensive school a long announced (!) information evening for parents, teachers and pupils was organized after the introduction of a completely different catering system. Several of the persons actively involved at the university took part in this event. To the disillusionment of the initiators of this event (the school management itself) almost nobody came. The number of informants on the podium was greater than in the auditorium. And this with a student number of over 1000!
- In another case, a lecture on school catering was given in a city with a population of 75,000, for which all of the city's parental care services had been invited. Also here the date and the topic were announced early enough and even still up-to-date in the daily press. Only 12 people came!

These two examples clearly show the low interest of the parents - to the great disappointment of the initiators. The same is true for the teachers, who rarely attend lunch. Participation would be a nice thing, but despite lip service to the contrary from all possible groups about the importance of good school meals, it is not or only rarely possible to realize it.

3.2 Legal requirements

Legal regulations are decisive for the success of school catering. This does not only refer to hygiene regulations, which are of course also fully applicable to school catering. This chapter takes up again the legal requests which have already been expressed in several places.

There should also be mandatory requirements for the individual systems. Statements in this regard are merely recommendations. Pure recommendations or appeals are of no use if they entail higher costs that cannot be recouped through the price. Since in school catering in Germany the price dominates all decisions, an applicant must pay special attention to this point. He cannot afford to meet high standards, because this costs more and he does not get the order. If there are legal requirements, he must comply with them, and then competitors would also be affected. In addition, however, a control would also have to be made mandatory.

The main problem with the German regulations is that they are not binding enough and that some laws from other legal areas hinder good school meals, e.g. VAT. There are only vague statements about school meals. There is no national regulation for school catering which would have to regulate the question of financing. Federalism prevents this because every country is allowed to do what it thinks is right in terms of education policy and does so intensively for reasons of profile via its networking agencies. There are no clear specifications for quality criteria, e.g. the maximum holding time, which is mentioned several times. This also includes the obligation to certify including the obligation to make changes if this is not achieved.

Statements should also be made in favour of a *system to which* the state is committed, because this system has the greatest advantages. As explained in detail in this chapter, for Germany these would be the temperature-decoupled systems. In other countries, due to different priorities and long-standing traditions, a different system could be preferred, e.g. fresh cuisine in Japan. It works there, too. Furthermore, an *obligation to consume would* be a sensible legal requirement, which would, however, be an unreasonable demand for many given the existing quality. It would therefore have to be introduced at a later date, at the latest when a school or central kitchen has been certified. Last but not least, the state should finally take *nutrition education* seriously and introduce compulsory nutrition or home economics lessons in all schools.

Such a commitment to higher quality school catering and the definition of promotional measures could set the course for planning. Active people would know what they were up to and would adapt their services accordingly. But in this way the state remains silent on all the questions mentioned and does not get anything off the ground. Changes often demanded, such as the reduction of VAT from 19 to 7%, seem to fall on deaf ears. Also on the subject of the catering system, no formation of opinion on the part of the state is discernible. The networking bodies, which are now active in all the Länder, support a plurality of systems instead of recommending and promoting the most suitable ones. But the networking bodies can only do what the state tells them to do. And it only specifies the DGE qualitystandards that cover the question of systems. This is to be criticized.

This state lack of opinion, which has been going on for years now, is a nuisance because it hinders progress. It's the same here as in traffic. In an interview, Michael Ziesak, chairman of the Verkehrsclub Deutschland (VCD), criticised that the federal government would finally have to clarify which traffic it wanted. Whether he wants to give preference to the railways or the roads, whether he wants to leave the rail network to the railways or whether he wants more competition through separation. "The[41]lack of specifications results in inability to act, and valuable time is wasted.

The legal changes cannot be further elaborated in this chapter. The laws concerning the promotion or inhibition of school catering would have to be reviewed once in a special report. One of the most important measures in this area would certainly be a national regulation on school catering.

4. Overall conclusion

The most important requirements for high-quality and sustainable school catering are summarised in Fig. 28. It will probably be a long time before these demands are realised in Germany, if they ever succeed at all in view of the federal system in Germany. However, this must not be a reason to waive these demands. After all, there are examples in other countries where successful concepts have been introduced for a long time. Japan's very good position in school catering has recently been confirmed in a worldwide comparison[42]. Also several countries in

41 Linnert U: Doing homework. An Interview with the Federal Chairman of the VCD, fairkehr 5/2014, p. 26

42 World Food Programm (WFP): State of School Feeding Worldwide. 2013. Via C.G. Viola, 68-70, Rome 00148, Italy. www.wfp.org/content/state-school-feeding-worldwide-2013

Europe (e.g. France, Italy, England or Finland) follow a national course in school catering, in which federal independence cannot play a disturbing role.

Fig. 28: Master plan for school catering

Various measures are important for the implementation of the master plan, which must always be based on certification. Politicians should adopt this measure and ensure that it is introduced everywhere, in schools and central kitchens. If a certification takes place, whereby TÜV Rheinland is meant with its extensive concept and not the DGE certification, then automatically different advantages follow from it. These are explained below.

a) <u>Certification and technical impact</u>

1. The first measure, namely to ensure qualification and control, is basically a double measure. First the qualification of the service providers is determined and then permanently controlled. Of course, this also includes internal service providers, e.g. a cafeteria club. This measure should consist of a ***certification***, such as the TÜV Rheinland examination based on the concept of the Niederrhein University of Applied Sciences as "Excellent Community Gastronomy". It is important here that all essential areas are checked and not just the wholesomeness of the food. Only through comprehensive quality control can the wheat be separated from the chaff. Certification would have to be obtained not only in the central kitchens, but also in all schools where lunch is offered.
2. The certification automatically promotes the **professionalisation of** school catering, which is the least pronounced of all areas of the community gastronomy. It is still too much managed by laymen, mainly for cost reasons. Appeals from politics, science or networking bodies are largely ineffective if they are not implemented through binding reviews. Professionalization can be determined and maintained with the instrument of certification. That's why it's so important. The policy should therefore define and apply this instrument, as too few are willing to voluntarily undergo a review.
3. Due to the circumstances, most schools are unable to pass the exam. If this forces a change, the professionally managed companies prevail, and these are usually the tempe-

rature-decoupled systems. This results in a ***standardisation of the*** catering at a high level of quality.

b) <u>Certification and impact on sensors/costs</u>

- The certification initially guarantees that all essential aspects of school catering are at a high level. This includes not only the technical aspects, but also the culinary aspects, i.e. first and foremost the taste. The TÜV Rheinland certification checks the sensory quality in different ways and only issues a certificate if the taste etc. is at least satisfactorily assessed.
- If a high sensory quality is given, the justification for introducing an **obligation to consume can be** derived from this. In the case of poor quality, as is unfortunately still the case in many schools, an obligation to consume would not be reasonable. The obligation to consume would have to be integrated into nutrition education.
- Once compulsory consumption has been introduced, the fixed costs for lunch can be significantly reduced, thus reducing the cost and **price of** food. This increases the attractiveness of the food in addition to its quality.

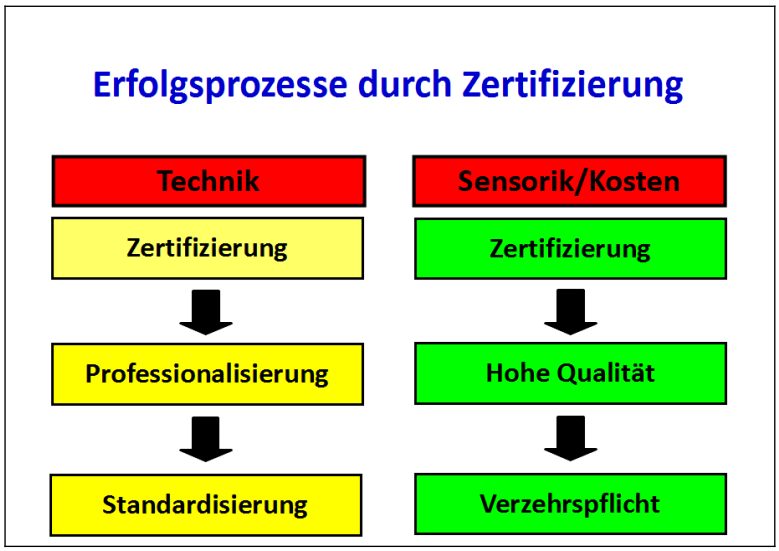

Fig. 29: Important elements for success based on certification