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*Work and learning:  
A look back and an outlook on a classical theme of education*\*)

Since the Reformation at the latest, work has always been linked with special expectations regarding the building of virtue and social disciplining. The motto was: *He who works, learns*, and not the other way around: In the Protestant-oriented education, learning without work was long held to be the idleness of the aristocracy and the upper class. Work was generally physical activity that contributed to livelihood and that was accompanied by a certain form of reflective piety. Up to the time of the argument between Voltaire and Rousseau, learning was held to be a luxury, so that Rousseau had to give reasons for a society-free form of learning in order to keep luxury and idle leisure away from education.

This underwent widespread change only in the nineteenth century, when the modern school became the institution of learning and could remove work. The successful fight against child labor showed for the first time the power of the new institution of learning. At first, learning at public school was said to prepare the young for the world of work, but increasingly, the reason for school was said to be general education, which was only very indirectly to have anything to do with work. This found symbolic expression: still today, we speak of “house of learning” and not “house of work.” In industrial society work became dependent work for pay that only to a limited extent had anything to do with learning.

Historically, then, work became *less and less* the medium and object of education. Or to put it another way, working for one’s livelihood became something that children and young people came to experience later and later. The creation of a public school system created a clear separation of the two areas of learning and work. Removing important parts of education from the home to the school as well as preparation for the world of work through the school created a moratorium that still exists today. However, there have always been attempts to unite learning and work in the school – that is, to remove the separation between them in a certain regard. The reason was the educational supposition that work could make school learning more lastingly effective.

I would like to begin by speaking about one of those attempts. In the nineteenth century, approaches became frequent in the German-speaking region that came to be known under the collective term *Arbeitsschule* (work school). They renewed the classical expectation that work educates in a special way (1). In a second part of my talk I will discuss the dual system of vocational education and analyze it in its current context (2). I will end with a prediction about the future relation between learning and work, which can longer be regulated institutionally (3). The relation between learning and work is older than the work school of

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the nineteenth century; it changed only as the school became socially a dominant institution. The question is how long this dominance will last and what challenges it.

### 1. *Work and work school*

Work is a central reform issue of Protestant German school education of the nineteenth century. Manual training, physical labor, and manufacturing one's own products were not only to complement learning in the school but challenge it. To this purpose, the program of the *Arbeitsschule* was developed, conceived as an alternative to school subject and lesson-centered teaching and learning. And indeed, in part extensive changes in forms of teaching and learning can be found in the public school of the nineteenth century that can be traced back to the projects of the work school. However, the fundamental relation continued to be safeguarded: "learning" in the school, also in the new forms of the work school, was to prepare young people for "work" and, with this, was not identical to work. This distinction was seen as the central achievement of the nineteenth century; it was the same as the distinction between general education and vocational education.

The conservative attempts to handle the development of the public school restrictively were of limited effectiveness, because the agency of control itself, the government administration, created a gradual but unstoppable evening out of the at first very large differences, so that an ever-more compact system could arise (Wiese, 1884, p. 48ff.; Bornhak, 1889). Once established, the public school system develop its own dynamics, which allowed continuous building up and secured ever more resources and jurisdictions. This was the case in Germany also for the period after the revolution from 1848 to the founding of the Empire in 1871, in which repression was practiced towards liberal forces (mainly of teacher education) and, at the same time, the building up of the public school continued.

By that point in time the process was already irreversible, and it had, despite all criticism, essentially only one direction, that of continuous expansion. A central factor was the course of the literacy rate (Block, 1994), which did not decline up to the end of the nineteenth century, showed steady growth, and required, with the simultaneous growing literacy of society, intensified institutional schooling.<sup>1</sup> But it was not only the levels of the elementary cultural techniques (reading, writing, and arithmetic) that rose irreversibly: also public school expenditures became firmly fixed in the government budgets, teacher education increased steadily, school times were extended, school offerings were improved through qualified textbooks, class sizes were reduced, and, not least of all, societal acceptance of the public school system grew.

Expansion and restructuring of the education system was basically a part of the modernization process in all industrial societies in the nineteenth century, even though there were differences in organization, sectors, and pace of development. In Europe there are centralistic and rapid nationalizations in addition to federative, slow, and certainly opposing developments, but this did not change the direction as a whole. In every case, an answer had to be found to the question of how, in the new dynamics of societal development, education should be organized. The answer could no longer simply be found based on local traditions

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<sup>1</sup> Increased literacy rate is not the product of public schooling alone but instead the product of the interaction of denser institutional schooling and increasing literacy of society (for Switzerland, see Messerli, 2002).

and the traditional socialization milieu; instead, an institution specialized for the purpose had to be developed.

With organized education, new and multilayered realities arose, which obtained their own weight without merely following educational ideals. The school's own logic was again and again the object of educational criticism. Many authors of the nineteenth century responded to the development of the school with high ambivalence. They welcomed the professional gains but were skeptical regarding the priority of knowledge and repeatedly complained about what the modern school excluded, due to its structuring – namely, simple civilization, learning as the most elementary thing, and direct utility. There were frequent complaints about the abstract nature caused by a modern curriculum and modern organization that had to adjust to large numbers.

On the other side, critics were unremitting in offering reform ideas, without every becoming at ease with the given reality. The reform postulates became stronger the more developed the school system became. What is crucial here is that in this way, the reform impetus became anchored in the institution: the pragmatic school education theory of the nineteenth century was not simply affirmative, as is often supposed; it was also a driver of criticism of the school, which became a lasting phenomenon. The school was not measured according to the results of a certain development but instead against an educational ideal that practice would have to better. What was meant by “ideal” was not the possible solution to a problem but a value that implied general advancement.

A central ideal in the discourse on the school in the nineteenth century was work. Productive activity was seen as an important means of education and very effectively described as the opposite of a passive “learning and book school”; this continues to have an effect to this day in the criticism of “chalk and talk” teaching. The concept was not invented at the end of the nineteenth century, contrary to what the dispute between Robert Seidel and Georg Kerschensteiner suggested.<sup>2</sup> Already in 1882 Robert Rissman had written a *history of work tuition*, titled *Geschichte des Arbeitsunterrichts in Deutschland*. Rissmann traced the educational importance of manual training to the educational theory realism of the seventeenth century. Transmitted via Pietism and Pestalozzi, Friedrich Froebel and the kindergarten movement were responsible for the realization of the concept in the nineteenth century (Rissmann, 1882, p. 47 ff.).

In the current day, writes Rissmann in 1882, the decision has to be made as to the fundamental principles of school education and this decision leads directly to reform pedagogy: three directions have arisen in instruction through work, namely, the training of skills for the development of a cottage industry, training of manual skills and dexterity as a preparation for work, and, finally, manual work as a means to educate the whole person (Rissmann, 1882, p. 86 ff.).<sup>3</sup> Only this third direction, writes Rissmann, accords with

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<sup>2</sup> Robert Seidel (1850-1933), university lecturer in Zurich and later Member of the National Council, refuted that Kerschensteiner, in a lecture titled *Die Schule der Zukunft eine Arbeitsschule* and held on the occasion of the Pestalozzi celebration on January 12, 1908 in Zurich, had advocated an original position (Seidel, 1909, p. 7ff.). Seidel (1909) held that he himself had formulated the central concept already in 1885, and that he had done so with a crucial difference to the Pestalozzian idea of experience (22ff.; see also Seidel, 1885), which could not function as the basis of work tuition (*Arbeitsunterricht*). However, since the industrial school at the beginning of the nineteenth century, this was not an especially novel idea, and a long dispute between the two principles can be found.

<sup>3</sup> This refers to, for instance, the *Leipziger Schülerwerkstatt*, founded in 1880 by the *Gemeinnützige Gesellschaft* in Leipzig and directed by Julius Woldemar Götze (1843-1898). In 1884 Götze also set up teachers' courses for training teachers for boys' handicraft, which in 1886 became a teacher education institute supported by the

education following Froebel (pp. 90/91), and only it can enrich the public school without being understood as “technological.”<sup>4</sup> For Rissmann, the *educational* rationale of work has to be strictly separated from the *economic* rationale, for the issue is not securing material existence but rather is a learning principle that was to be understood independently of its economic benefits.

The principle is usually expressed as follows: Only that which a person has tested and experienced in practical activity as useful can become the general rules and guidelines of behavior. As an additional aspect, work on a product is something that can be completed and be a visible success, whereas the school deals with problems of knowledge and insight that as a rule are inconclusive. But children find things that can not be brought to a satisfactory end boring or repulsive, because no there is no visible success, as Heusinger wrote as early as 1800 (Heusinger, 1800, p. 37ff.). Children learn far more when they can produce and work practically. They start out from practical problems and not from abstract educational distinctions that have nothing to do with the horizon of their experience.

Throughout the entire nineteenth century, there were discussions along the lines of this critique on how work and constructive self-activity could be made a principle of school teaching and learning. According to Karl Preusker (1835), this issue was also the entire plan for organized public education, which should include building up the Sunday schools as well as building up of *Realschulen* (*scienced based highschoools*) and vocational schools, promotion of the trade associations in order to raise industriousness in the trades, cameralistic studies, and, not least, the establishment of public libraries.<sup>5</sup> The *Realschulen* and the Sunday schools as forerunners of the vocational schools were ambitious reform projects in the nineteenth century that were financed by the municipalities and associations and for a long time were *not* run as “state institutes.”<sup>6</sup> The fundamental educational principle underlying them was productive work. The same holds for the concept of “continuation” in occupation and trade that was first used by Preusker (1835, Part III/p. 9ff.).

Already at mid-century, it was disputed whether manual work can be defined educationally or not. An important impetus for the educational theory on manual training was the World Exhibition in Vienna in 1873.<sup>7</sup> It also led to a discussion on whether the social question could not be resolved by means of reforming the public schools in the direction of *Arbeitsunterricht* (Eckardt, 1875). With this, attention shifted from courses in manual work (Schallenfeldt, 1861) to the problem of how the relation between vocational education and general education should be designed. Dovetailing them by means of teaching workshops, for example (Bucher, 1879, p. 35 ff., 55 ff.), was to be done in a way that made *Arbeitsunterricht*

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*Deutsche Verein für Knabenhandarbeit*. The concept of *Handarbeit* [handicraft] went back to Karl Biedermann's (1812-1901) book *Die Erziehung zur Arbeit* of 1852.

<sup>4</sup> Starting with Hermann (1781), the expression technology was in the educational sector restricted to training in art craftsmanship and industrial schools.

<sup>5</sup> Karl Benjamin Preusker (1786-1871) studied Cameralistic in Leipzig and worked from 1824 as a royal Saxonian official in Großenhain. Here, on October 24, 1828, he ordered the establishment of the first school library for teachers and pupils, which according to his plans was expanded to become the first free-of-charge public library in Germany. In 1830 Preusker also founded the first trades Sunday schools and was in addition a supporter of the trades associations.

<sup>6</sup> The demand probably goes back to Lehmus (1833).

<sup>7</sup> Since the World Exhibition in London in 1851, educational reform discussions were always connected with these events, especially on the topic of correct educational method (on Philadelphia 1876 and the project method, see Knoll, 1988, p. 502f.). The World Exhibition in Vienna presented model schools, including concepts for the *Arbeitsschule*, although at a comparatively simple level (Schwab, 1873, p. 6).

appear to be a general principle of teaching and learning.<sup>8</sup> There were attempts to join *Arbeitsschule* (*work school*) and *learning school* in Froebel educational circles, for instance; in their description of practice in 1876 it is easy to recognize the project method and *Epochenunterricht* [block teaching] (Hanschmann, 1876, p. 276ff.), which therefore in no way appeared only later in the work school models of *Reformpädagogik* [progressive education].

The basic principle of these approaches was directed against the institutional design of the public school in the nineteenth century: teaching and learning should no longer be separated by school subject and transmitted via standardized textbooks but instead should relate to concrete, practical problems, on which pupils would work in self-activity and with a product orientation. This kind of learning work yields insights and questions that can be related to certain areas of knowledge, without allowing their structure to determine the type of teaching and learning. The knowledge is not learned according to a curriculum but instead acquired in the execution of practical activity (SCHWAB, 873a, p. 19ff.). In this way, it is assumed, a whole new motivation develops towards the school, which can prove to be directly useful for life. Or to put it another way, this was an early version of the project method, which originated in concepts of the *Arbeitsschule* (*work school*).

And there is a history to that. In 1697 Daniel Defoe published *An Essay Upon Projects*. Defoe's essay reports on handling risks that can be mastered only practically. Projects are undertaken in order to discover something new, that demands drive and skill and can succeed better or worse. "Every new voyage the merchant contrives is a project, writes Defoe (2006, p. 99). The same goes for banks, stocks, stock-jobbing, assurances, lotteries (p. 100). The risks of an undertaking can be determined only by means of a project, and the more intelligently that this is done, the better (p. 100). However, there are also dishonorable project makers, "wherefore it is necessary to distinguish among the projects of the present times between the honest and the dishonest" (p. 112). What is ultimately decisive is not simply the success but rather the relation of morals and benefit.

The educational method has to be distinguished from this early theory of the project. It, too, has a long past history going back to the seventeenth century (Knoll, 1991). Starting in 1702, the *Académie Royale d'Architecture* in Paris,<sup>9</sup> which was founded in 1671, held competitions for architectural designs, called *projets*. The Academy was the only one of the royal academies to have instituted a school for architecture. The school's competitions challenged the students to be cooperative and creative. Learning by projects was intended to be an exercise in artistic creativity and – in the framework of the classical tradition – to challenge the students to produce innovative solutions that could be realized (Knoll, 1991, p. 45). In this way, the project was to produce a realizable product.

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<sup>8</sup> The Danish cavalry captain D. Clauson-Kaas (died 1906) lectured throughout Germany in 1878 and recommended a concept of home industry, with handicraft schooling to support additional earning in the home. In 1873, with Clauson-Kaas as its advocate, the General Danish Home Industry Society was founded in Copenhagen, which organized local home industry associations. The associations ran handicraft schools that prepared young people for the occupations. They received attention in Germany (Schenkendorff, 1880, p. 50ff.; Wiessner, 1889, p. 332ff.). Reincke (1995) explains the connection of the concept to the Swedish *Sloyd* movement; Gonon (1992) provides information on the continuity of the *Arbeitsschule* discussion.

<sup>9</sup> The *Académie* was founded on December 30, 1671, by Louis XIV and abolished in 1793 by the National Convention. In 1803 the *Académie de l'architecture* was founded as a successor, as a part of the Institut de France.

Art academies with a similar educational orientation grew up also in the German-speaking region. The author and theatre director Johann Jakob Engel<sup>10</sup> proposed in 1788 the founding of an academy of the arts in Berlin based on the French model (Engel, 1788). In parallel, the establishing of some art schools was discussed (Hecker, 1788). At this time, a productive *Arbeitsschule* (*work school*) was already being referred to on the educational discussion. In December 1806, an anonymous essay appeared in Johann Christoph Gutsmuth's journal, *Bibliothek der pädagogischen Literatur*, recommending the widespread establishment of *Arbeitsschulen* (*work school*). The schools would be for both boys and girls and based on the principle of a productive orientation ("Arbeitsschulen," 1805). The establishment of *Arbeitsschulen* was demanded in 1792 in the *Berlinische Monatsschrift* (Riemann, 1792), and in that same year, instructions for teachers in these schools were already published (Holscher, 1792). The joining of handicrafts and scholastic lessons had become a basic formula of school development by the beginning of the nineteenth century (Lachmann, 1802).<sup>11</sup>

The educational concept of productive work, or the "project," spread through the architectural schools, institutes of the arts, and the various types of *Arbeitsschule*. The method came to America from Europe: in 1879, the St. Louis Manual Training School, a high school using the methods of the *Arbeitsschule*, was founded in St. Louis, Missouri. The pupils had to not only produce working drawings of projects but also had to actually construct them in the shop. They built shelves, forged lamps, built motors (Knoll, 1992, p. 91). The pupils were themselves responsible for the planning and execution of the projects; they took their ideas based on actual problems in everyday life or constructed objects that allowed them to test in practice their theories and plans.

In 1865 Calvin Woodward<sup>12</sup> had come to Washington University in St. Louis, which had been founded twelve years previously. Woodward was named Dean of the School of Engineering and Architecture at the university in 1870 and in 1879 became also the director of the Manual Training School at the university, which he had founded. The idea for the school came from the Russian exhibit at the Centennial Exhibition in Philadelphia in 1876.<sup>13</sup> There the Russian manual training educationalist Viktor Karlowitsch Della Vos<sup>14</sup> demonstrated how general education and vocational education could be integrated to the advantage of both. John D. Runkle,<sup>15</sup> second president of the Massachusetts Institute of

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<sup>10</sup> Johann Jakob Engel (1741-1802), son of a pastor, studied theology in Rostock and Leipzig. Alongside his studies he worked as an actor. In 1776 Engel became a professor at *Joachimthalisches Gymnasium* in Berlin. He taught philosophy and fine arts. In 1787 he became a member of the Prussian Academy of Sciences. Engel was private tutor to the Prussian Crown Prince and made a name for himself as author in the Berlin Enlightenment. From 1786 to 1794 he directed the *Nationaltheater* in Berlin.

<sup>11</sup> Carl Rudolf Friedrich Lachmann (1756-1823) was the first preacher of the St. Andreas Church in Braunschweig starting in 1798.

<sup>12</sup> Calvin Milton Woodward (1837-1915) graduated at Harvard University in 1860. For a short time he served as principal of Brown High School in Newburyport, Massachusetts. In addition to his work at Washington University in St. Louis, Woodward was a member of the school board of the city of St. Louis for many years. In 1885 he presented his ideas on vocational education also in Europe.

<sup>13</sup> This first World Exhibition on American soil opened on May 10 during the United States Centennial year of 1876. The exhibition was host to 37 nations, with the exhibits in 250 pavilions. The Exhibition had nearly 9 million visitors at a time when the population of the United States was 46 million.

<sup>14</sup> Viktor Karlowitsch Della Vos (1829-1890) studied physics and mathematics in Moscow. After completing his degree in 1853 he became a teacher. From 1860 to 1864 he studied in Paris und London. He then became a professor of mechanics at the *Petrowsky-Akademie*. In 1867 he took over directorship of the vocational school in Moscow and a year later became director of the Imperial Technical School (see Schenck et. al., 1984).

<sup>15</sup> John Daniel Runkle (1822-1902) was a mathematician. He graduated at Harvard University with a Bachelor of Science degree. Runkle became the first secretary of Massachusetts Institute of Technology (MIT) in 1862 and served as president of MIT from 1870 to 1878.

Technology (MIT), also saw the Della Vos exhibit and from then on became a proponent of the “Russian system” of technical education.

As director of the Imperial Technical School in Moscow, Della Vos had developed a method that allowed integration of specialized organized curriculum and shop experience. The idea of instruction in shops, which Woodward took over, goes back to Della Vos (Woodward, 1887). Della Vos’ sequential method was based on the principle that the pupils’ work on tasks progressed in difficulty. The practical value of each achieved solution also had to increase with each achieved solution. In this way pupils could check their own progress, which meant increasing their knowledge and also their skill. In this way work as an integrated learning principle.

Woodward’s school in St. Louis was not a vocational school in today’s sense but was instead a public high school at which the methods of manual tool work were used in instruction, in teaching knowledge. The pupils made products but not with the aim to learn an occupation but rather in order to acquire general skills. The purpose was improvement of scholastic learning; the activity was educationally defined and was not intended to produce commercial value. Many schools following the model of the *Manual Training School* were founded after 1879, often in connection with industrial firms. For instance, the entrepreneur James Stout funded the Stout Manual Training School in Menomonie, Wisconsin, which opened its doors on January 5, 1891. The plan for the school was developed based on visits to other manual training schools, of which many existed also in rural areas.<sup>16</sup>

After the turn of the century, the project method was also used in elementary schools, without having an educational theory behind it. Between 1900 and 1915 a regular *project movement* arose (Knoll, 1992, p. 91f.) that propagated school reform through project work and a child-centered orientation. In their book *Schools of Tomorrow*, John and Evelyn Dewey (1915) described essentially experiments with project teaching, which, however, were all very different, with technical, practical, social, and artistic variants already. Somehow, everything seemed to be able to be a project, so that now the discussion looked to terminological clarification or a *theory* for the project method.

The task of formulating the theory was taken on by William H. Kilpatrick, professor at *Teachers College* of Columbia University in New York since 1909,<sup>17</sup> in a famous essay in 1918 in *Teachers College Record*, the leading journal of American education. Kilpatrick’s essay, titled simply “The Project Method” (Kilpatrick, 1918)<sup>18</sup> did not mention predecessors and made Kilpatrick appear to be the inventor of the new method. It was extraordinarily successful: the journal sold 60,000 reprints, which when viewed today indicates unbelievable demand (Westbrook, 1991, S. 504). This article played a central role in establishing the

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<sup>16</sup> The criticism of the Manual Training Schools found fault with the fact that the training was not based on skills that were required in industry and the trades. It was out of this criticism that the actual vocational training arose (Smith, 1999).

<sup>17</sup> William Heard Kilpatrick (1871-1965) was appointed lecturer in education at Columbia University in 1909. Previously he was director of a school in Georgia. In 1918 Kilpatrick was appointed professor of philosophy of education at Teachers College of Columbia University, a position that he held up to 1938. The *Progressive Education Association* was founded in 1919 with the considerable collaboration of Kilpatrick. Of course, the school reform movements are older; they go back to philanthropic efforts of the nineteenth century and show clear influences of European educational theory (Cremin, 1988, ch. 5).

<sup>18</sup> Kilpatrick’s essay was published in German translation in 1935 (Dewey/Kilpatrick 1935, pp. 161-179), in a context that saw Kilpatrick’s version of the project method clearly dependent upon Dewey’s theory of problem solving. That connection does not hold up, however.

principle of active and product-oriented (constructive) learning; the same is true of the criticism.

The discussion in the middle of the nineteenth century in Germany was aware of that *Arbeitsunterricht*, or constructive activity, had been criticized as not educational. In 1847, for instance, Heinrich Gräfe<sup>19</sup> had pointed out that learning, not work, must be the main content of school for after all, learning *is* young people's work (GRÄFE, 1847, Vol. 1, p. 627). This objection was raised again and again (for just one example, see *Die Schulwerkstätten* 1881), but it was not able to weaken the classical argument of progressive education that constructive activity is educational. A connection was sought that would, namely, allow school and work to become coupled in a way that the learning principle of the school could be maintained and at the same time the abstract principle of instruction according to school subjects can be corrected. For this, the expression "polytechnic school" was available early on (Schnell, 1821).

The background to this discussion in Europe was that in the world of practice, the concepts of handicrafts instruction, school workshops, and not least school gardens were tried out, which were held to be especially important in the development of the project method.<sup>20</sup> In the second half of the nineteenth century, there were many attempts in different places to adjust the expanding school system to those principles of reform that in the reflections of the teachers led back to and kept alive Pestalozzi and Froebel (WIESSNER, 1889). Erasmus Schwab 1873 in Vienna introduced the prototype of an Austrian rural school house, which in addition to the school house and the school garden also had working quarters and a gymnasium. The idea was so inspiring that at the beginning of the twentieth century, ideal school gardens could seem to many the utopia of *Reformpädagogik* (progressive education) (Graeber, 1907).

Along these lines, "work" was made educational, as a part of learning and not in the service of earning a living. A further step was the establishment of a connection between learning, work, and education that in the German-speaking region could develop as a "dual system" of vocational education and training. (In the "dual system" young people do an apprenticeship in a company. Parallel to this training they have school, normally once a week.) Young people also had to be trained for the new industrial occupations; work demanded a learning process. Pupils prepared for their later occupations through long years of apprenticeship that led them step-by-step towards the job and lengthened the moratorium of education. In the next section, I will look at the consequences of this step.

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<sup>19</sup> Heinrich Gräfe (1802-1868) became the director of the *Bürgerschule* in Jena in 1825 and was appointed associate professor at the University of Jena in 1840. Two years later he accepted an appointment as director of the *Bürgerschule* in Kassel. Gräfe developed the school into a modern *Realschule*. Gräfe was a member of the schoolcommission and a member of the Hessian Parliament. In 1851 he took a trenchant position against the conservative reaction in the constitutional battle in Hessen-Kassel; he was arrested and then removed from office. After serving a sentence of one year's imprisonment Gräfe went to Switzerland and founded a private educational institute. In 1855 he accepted an appointment in Bremen as director of the vocational school there.

<sup>20</sup> School gardens were a reform topic already in the mid nineteenth century, and they were advocated in the 1870s mainly by Erasmus Schwab (see, for example, Schwab, 1876). There is a connection, also ideological, here with the "Schreber Movement," or allotment gardening movement: *Müssen nicht die Kinder alle zu Baum- und Blumenfreunden werden und sind sie nicht dadurch, dass sie Naturfreunde werden, schon auf dem Wege, gute Menschen zu sein?* [Should not all children become friends of trees and flowers and are they not, by becoming friends of nature, already on the way to becoming good people?] (Schwab, 1876, p. 17). Erasmus From 1853, Schwab (1831-1917) taught at *Gymnasium* in Kaschau, Brünn, and then Olmütz, where he became director in 1872. In the same year, he left civil service and became director of the private *Mariahilfer Kommunal-, Real- und Obergymnasium (Christian highschool)* in the sixth district of Vienna.



## 2. Learning, education, and work

The term “dual system” was probably used for the first time in Germany in 1964 in *Gutachten über das berufliche Ausbildungs- und Schulwesen* (Experts’ Report on Vocational Education and School System) published by the Deutscher Ausschuss für das Erziehungs- und Bildungswesen (Bohnenkamp, Dirks, & Knab, 1966, p. 429).<sup>21</sup> The term is used at first in a historicizing way: The experts’ report states that around the “turn of the century” the “dual system” of vocational education and training for apprentices was established in a form that had not existed before (p. 429-430). What was called the *Berufsschule* (vocational school) in Prussia in 1923 went back to the efforts of the *Verein der Freunde und Förderer der deutschen Fortbildungsschule* founded by Oscar Pache.<sup>22</sup> The association wanted to turn the loosely organized and not obligatory continuation schools into obligatory public schools, which was finally achieved in October 1937 by decree of the *Reichsministerium für Wissenschaft, Erziehung und Volksbildung* (ministry of science and education).

This decree prohibited the naming of short and flexible courses as schools; these courses had previously served the changing educational needs. For the first time a binding definition of what the position of the vocational school was in the dual system.<sup>23</sup> With the *Reichsschulpflichtgesetz* (law on compulsory education) of 1938, compulsory vocational school was introduced, and it was never later called into question. Never again was only public school compulsory, attendance at vocational school was now compulsory for all who were to be trained. With this, the state determined the organization of vocational education, not with *Anlehren* (basic apprenticeships) and corresponding course offerings, but instead with a scholastic curriculum that had to be completed alongside the vocational apprenticeship. Learning and work made parallel.

Originally, the idea was that the vocational school would fill the great gap between the public school and the beginning of military service (Bohnenkamp, Dirks, & Knab, 1966, p. 431), which from the start was brought into connection with the task of civil education (it was never clear what civil education was and why a separate form of school had to be responsible for it). The authority of Georg Kerschensteiner was grounds enough; to push the project through was the responsibility of the lobby of the continuation schools. In the end it established not only theoretical, scholastic-type education and training alongside the practical apprenticeship but at the same time an increasing portion of general education, for which previously the primary/lower secondary school had provided.

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<sup>21</sup> The Experts’ Report was adopted in Bonn on July 10, 1964. Heinrich Abel (1908-1965), who in 1963 was appointed professor for *Berufs-, Arbeits- und Wirtschaftspädagogik* at Technische Universität Darmstadt, had a central influence on the report.

<sup>22</sup> Starting in 1896 Oskar Pache directed the *IV. Fortbildungsschule und -wesen für Knaben in Leipzig-Lindenau* (founded in 1876). The establishment of continuation schools stands in connection with measures for the schooling of the unskilled (Biermann & Kipp, 1989).

<sup>23</sup> “*Berufsschulen sind sämtliche Schulen, die pflichtmässig von gleichzeitig in der praktischen Ausbildung (mit Lern- oder Ablernverhältnis und dergleichen) oder in Arbeit befindlichen jungen Menschen sowie von erwerbslosen Jugendlichen besucht werden*” [Vocational schools are all schools with compulsory attendance for all young persons who are at the same time in practical training or working or young persons who are unemployed] (MinErl. Reichsmin. f. Wiss., Erz. u. Volksb. vom 20. 10. 1937).

The Experts' Report of 1964 contains all arguments and justifications that are also still used today when the issue is the legitimation of the vocational school in the dual system:

- Apprentices are currently cheap labor, not “young persons who require training and education”;
- The instructors should be better prepared for their tasks, both as teachers and as specialists in their areas;
- “Modern, successful vocational education should bring together business and scholastic training methods”; where companies can not do this, the schools must take over these tasks;
- The curricular course as a whole is superior to part-time training, even when the training accords with the guidelines in the professional code of conducts. (Bohnenkamp, Dirks, & Knab, 1966, p. 421ff.).

It is interesting that in the German report, the vocational concept is seen in connection with European thinking and differentiated from American approaches, which are said to start out only from the demands of the particular job at a place of employment and to not represent any concept of real education. The European view, it is said, places the focus on the person, their education and experience (Bohnenkamp, Dirks, & Knab, 1966, pp. 481-482) and not just on the job. But holding on to the person-bound vocation, says the report, is the best means of responding to the changed societal conditions and, with them, the changed position of the occupation in the life of the individual (p. 482). The crux is that vocational training must be fulfilled as a comprehensive educational task – and thus at last fulfill an old postulate by Eduard Spranger.<sup>24</sup>

The opposite, which would be constant *training-on-the-job*, is rejected outright; anyone who starts out from the demands of the workplace acts fundamentally not educationally.<sup>25</sup> At the same time, it is assumed in a self-understood manner that additional support is needed from the government in order to respond to the increasing demands for a qualified workforce, which are not estimated in any more detail:

Im ganzen aber sind die qualitativen und quantitativen Anforderungen an die Ausbildung der Jugendlichen derartig gewachsen, dass daraus eine öffentliche Verpflichtung geworden ist. Ihre Erfüllung hat mit legitimen, aber heute in ihrem Verhältnis noch nicht ausgewogenen wirtschaftspolitischen, sozialpolitischen und kulturpolitischen Interessen zu rechnen und deren Aspekte zu berücksichtigen. (Bohnenkamp, Dirks, & Knab, 1966, p. 473).

[All in all, however, the qualitative and quantitative demands on the education and training of youth have risen so much that there is now a public obligation. Fulfilling

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<sup>24</sup> Spranger, E. (1920). *Allgemeinbildung und Berufsschule*. Vortrag auf dem XIII. Deutschen Fortbildungsschultag am 27. Mai 1920 in Dresden.

<sup>25</sup> “Wir haben heute nur die Wahl, die in der modernen Zivilisation auch im Felde der Arbeit und des Berufes liegenden menschenbildenden Kräfte zu erschliessen und in der Jugendbildung wirksam zu machen oder vor der Herausforderung unserer Zeit zu resignieren. Solche Resignation freilich würde bedeuten, die in dieser Welt aufwachsende und ihr offen zugewandte Jugend in der zentralen Aufgabe, die ihre Existenzgründung und –sicherung betrifft, allein zu lassen oder apädagogischen Kräften zu überlassen” [Today we have the choice to exploit the person-forming powers that in the modern civilization are also in the field of work and occupation and to use them to effect in the education of young people, or to resign in the face of the challenges of our times. By resigning, however, the young people growing up in and attuned openly to that world would be left alone in the central task regarding their finding and securing an existence or left in the hands of non-educational influences (Bohnenkamp, Dirks, & Knab, 1966, p. 475).

that obligation has to reckon with legitimate, but today not balanced in their proportions, economic, social political, and cultural political interests and take their aspects into consideration.]

Hiding behind the second, cryptic sentence above are main assumptions of the time – that is, theories reinforced by OECD statistics that economic growth is significantly associated with investments in education, the theory of equality of opportunity, which is directly coupled with the building up of the vocational school system (Bohnenkamp, Dirks, & Knab, 1966, p. 474), and, finally, the convergence of general *Bildung* (education, development, formation) and specialist-vocational *Ausbildung* (training), whereby the fine differentiation between *Bildung* and *Ausbildung* should be noted, which has been made only by German educationalists.

The theory situation today does not seem to be much different. The OECD continues to follow a combination of human capital theory and postulates of equality of opportunity; it is recommended that the dual system be reformed, but it is basically defended using largely unchanged arguments (Schlaffke, 1996), and also the fine distinction between *Bildung* and *Ausbildung* continues to be effective. *Bildung* follows Neoplatonic lines of argumentation that goes back to the beginning of the eighteenth century and is still very much alive in the German discussion today, namely, whenever education is to be understood as pure and for its own ends. In contrast to that, *Ausbildung* is connected to the requirements of the world of work, to practical occupations, which although tedious have to be thoroughly learned if one is to be successful in one's working life.<sup>26</sup>

However, forty years after the Experts' Report by the German commission, the economic and corporate reality has changed dramatically. More precisely: The reality of "occupation" has changed irreversibly, with consequences that are hardly foreseeable. The first agreements signed with apprentices after the passing of the *Neuordnung des deutschen Lehrlingswesens 1897 (Handicraft Protection Law of 1897)*, were based on the assumption that young persons would learn an occupation that they could practice lifelong. This was allowed for also in the apprenticeship examinations in agriculture first held in 1907, which according to the regulations were based on abilities and skills that were to be learned *once* and then *permanently*. That is meant by the expression *gründliche Berufsausbildung* [thorough vocational training] (Bohnenkamp, Dirks, & Knab, 1966, p. 482), which assumes that occupations are learned at the beginning in such a way that the basics are mastered and tested and can then be used permanently.

However, already by 1907 that was true only in the sense that learning was adjusted to the examination regulations. Also, at the beginning of the twentieth century it was imprudent to use *the one* term "occupation" for all possible areas of work and to associate it with *uniform* educational postulates. But whatever it was that "occupations" had in common, the main fact was that they differed, and they did so not least with regard to how they should be learned. The guidelines for the vocational training of apprentices for individual occupations education and training of apprentices emphasize the independence of the occupations and the specificity of their competence, whereby the guidelines ultimately always follow the idea of "equipping" the apprentices. *Before*, one has to learn what one can *later* (and this, as far as

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<sup>26</sup> Where the young person learns to see his learning work in connection with later economic security and becoming part of society, "wird er auch *Anstrengung* und *Mühsal*, wie sie mit jeder Berufstätigkeit verbunden sind, als den von ihm geforderten Einsatz verstehen, durch den er sich dem Leben der Gesellschaft einordnet und an ihm teilhat" [he will also view *exertion* and *toil*, which every occupation involves, as the effort through which he becomes a part of the life of society and participates in it] (Bohnenkamp, Dirks, & Knab, 1966, p. 482).

possible, in toto) use. This is an ideal type, in Max Weber's sense, of education that continues today to decisively shape at least school education.

According to this ideal type, learning comes before work. The two can be distinguished so that no problems of assignment occur. Education is learning, not yet work; work assumes learned ability, which can be continuously improved to be sure but does not have to be produced *numerous times*. The historical system of vocational education and training bases on the assumption that at the start basic skills can be produced that will be of lasting effectiveness without having to be restructured a second time, a third time, or even more times. You are educated and trained in one occupation, and the expectation is that further learning can be directed towards the requirements of this occupation and not many different occupations.

To this the practice of the regulations responds: The formal requirements of the basic training are so high that it is impossible to become trained for several occupations *at one and the same time*. This statement itself sounds offensive and sounds like an attack on the seriousness of education and training, although in the future

- hardly anybody will work in *one* occupation lifelong,
- occupations are dramatically losing their *closed* nature,
- professionalism is increasingly oriented to *projects*,
- projects require high and original *learning ability*,
- learning ability assumes *rethinking, relearning*, and
- learning quality is determined by *individual capability*.

MAX WEBER (1972) described three typical forms of work that were related to industrial production, commercial enterprise, and work in bureaucracies. In all three cases, there were rational standardizations that could be largely understood impersonally. The symbols were assembly line, department store, and open-plan office; they refer to rationalizations in manufacturing, trade, and administration, for which certain jobs could be standardized. Training aimed at these jobs, thus at work that was essentially defined *beforehand*, that could be subdivided into its elements, and learned following this educational dissection. Occupations in the trades and in agriculture came closer to this industrial rationalization and could therefore be treated similarly in terms of education and training.

The fact that in Switzerland today there are more than 300 regulations in the area of education and training for the OPET occupations<sup>27</sup> alone<sup>28</sup> shows the historical power of the rationalization that essentially rests on the idea that learning can prepare in a targeted manner for foreseeable and high quality work in an occupation. However, jobs in the industrial sector are being lost rapidly and irretrievably, also in the digitizable sector of services, or as a result of reduction of large companies to their core businesses. New, not low-threshold jobs arise often only under three conditions – rapidity, cannot be automated, and diverse use of general skills oriented to new activities. In this sense, learning replaces rationalized work that was developed on mechanical and not digital bases.

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<sup>27</sup> Occupations that are recognized by the Federal Office for Professional Education and Technology (OPET) (*Bundesamt für Berufsbildung und Technologie* (BBT)).

<sup>28</sup> Within those, the differentiation is even more astonishing. For instance, the vocational schools in the trades-industrial area are divided into 16 different fields, and the fields in more than 60 areas, each area having its own requirements.

With the overcoming of mechanical rationality there are extensive and dramatic consequences

- constant restructuring of work through learning,
- elimination of rigid work hours,
- minimization of work and learning-free times,
- widening of individual learning responsibility,
- self-organization of career,
- constant redistribution of profit and loss.

Vocational education will have to adjust to these new conditions, and that is not an easy process. In Switzerland at present, 60% of apprentices are being trained in the traditional area, which makes up only 20% of companies today, whereas 70% of companies in the tertiary services sector are training only about 20% of apprentices. Future demand will be for – besides low-threshold jobs – employees with high and broad general education that can frequently change their work and rethink and no longer be satisfied with basic training once learned. Unique and isolated vocational training becomes weakened all the more that this process becomes stronger. The rigid separation between vocational education and general education is thus becoming porous due to the development of the labor markets and, more specifically, the employment situation.

The reason is a change in the relation of *work* and *learning*: If we can even still speak of occupations, then learning is no longer preparation for an occupation but instead the foundation for employment itself. The educational distinction between learning and work, which arose as we saw in the nineteenth century, is dissolving, because work has essentially become learning. Work means simply continuous problem-solving under ever changing conditions – it is not using something that you learned once and for all. After education and training, you are not finished, you are simply qualified for the start; the job itself consists in constant further learning, and anyone who can not adapt to this condition loses out. The rising demand for continuation shows the calculation of the prospective customers that do not want to lose out. For this reason, the resource of the future is not simply education but rather learning ability – the ability to develop and adapt skills to ever new situations without practicing a lifelong occupation.

This changes education dramatically, because privileges shrink and become dull. Certifications and authorizations were introduced in the nineteenth century, in order to be able to control access to *individual* occupations. In this respect, there is no difference between an industrial apprenticeship and permission to set up as a medical doctor; the success of the learning is demonstrated by the certification, which entitles to specific privileges. Certifications of this type are always *completion / conclusion* of learning; they certify occupational competency without the reservation of further learning processes but instead open up entrance to one definitive occupation. But it is not a coincidence that today “competency” is described more and more in personal resumes. Here what is important is no longer the final grade but rather the quality of permanent learning processes. Otherwise, it would have been impossible, for example, to shift whole generations of secretarial personnel to computer programs within a short period of time.

That example shows something else as well: learning ability refers increasingly to self-responsible and largely self-organized education, which distances itself more and more from rigid education programs and can adapt to new requirements at short notice. Through this, not only does the time horizon of education change but also the responsibility, which can no

longer be simply passed to schools that conclusively regulate what learning is necessary and what not. The school learning quanta will enter into competition with the learning work done by individuals who know how to equip themselves – and not all at once for “life” or for “one’s occupation” without any time period (that is, in a fictitious way “lifelong”) but for certain requirements that arise in the situation and which therefore can be used or missed out on. In a certain sense, you become your own educational entrepreneur, who knows how to respond to demand and who in the best case creates demand himself.

In contrast to scholastic general education, which represents a closed world, vocational education profits from its proximity to the work and learning fields of the economy. It can not close itself off from the flexibilization of learning and work and will have to respond with pragmatic adaptation; there is in future no longer automatic indispensability, and precisely that sets learning ability free. What is more urgent appears to be another problem: Vocational education today can no longer assume, that most of the trainees have the relevant competence to start with their profession-training. The system is not dovetailed between vocational education and general education, because interfaces and transitions are not in place, or have not been sufficiently in place up to now. Here again, standards are lacking that instruction could follow, so that it is more or less by chance that good grades and true competency coincide.

I will return to this in the last section of my paper; as a transition, so to speak, I ask why, if that is so, companies hire apprentices and why companies do not. When companies hire *no* apprentices, the reasons are not usually asked for in public but instead attributions are mobilized that can be called up like reflexes. As if companies still found themselves in Kerschesteiner’s day, training apprentices is viewed as a moral task, which if *not* fulfilled leads to political sanctions. We can think here of the discussion on Germany on a *Lehrstellenabgabe* (apprenticeship tax). That assumes that training apprentices is a social value per se for the companies, which can be understood independently of its quality or benefits.

But companies seldom take a philanthropic stance; tasks in the area of training have to be profitable to them. In a study on the costs and benefits of training apprentices from the perspective of Swiss companies, Wolter and Schweri (2003) examined the *economic* factors of talking on and employing apprentices in a representative study of 2,300 companies. The study is correct in assuming that these factors were largely neglected in the past as compared to educational expectations but that they will largely determine the future of vocational education. The authors conclude, to bring it to a common denominator, that we can assume that if training apprentices makes no economic sense, then it will hardly survive in its current form (Wolter & Schwerri, 2003, p. 3).

Fundamentally and across all lines of business, it is worthwhile to train apprentices. Wolter and Schwerri (2003) sum up the main finding of the study as follows:

In almost two-thirds of all of the companies, the training of apprentices is profitable despite the high costs ... already during apprenticeship the productive performance of the apprentices compensates for the costs and in most cases over-compensates. (p. 5; freely translated here)

Especially convincing is the course of the cost-benefit streams over time. Wolter and Schwerri (2003) report:

The gross costs increase with the duration of the apprenticeship because of increases in the apprentices' wages, but their productive performance increases even more. As a consequence, the net costs decrease, or net yields increase. The final year of apprenticeship is the most profitable for the company. For four-year apprenticeships, the differences between the years are particularly marked. In the first two years of the apprenticeship, investment is being made in the human capital of the apprentices, which is seen in the low productive performance and high net costs, whereas in the final two years of the apprenticeship a correspondingly higher yield can be achieved. (p. 5; freely translated here)

But there is no such thing as "the" training of apprentices. Costs and benefits differ strongly depending on the size of a company, the branch, the language region, and not least the occupation itself. Training an electrician is not expensive; training a poly-mechanic is very expensive. Both are four-year apprenticeships, but the electrician apprentice is productive much earlier than the mechanic. Mechanics require much more intensive training in the first apprenticeship years than electricians, which raises costs and lessens the amount of time in which the apprentices could work productively (Wolter & Schwerri, 2003, p. 6). But also within one and the same occupation a different temporal course of training and productive activity can be observed. Finally, the percentage of apprentices that remain at a company after completing an apprenticeship is higher, the higher that the recruiting opportunity yield is.

The fact that the training of apprentices in the companies is mostly profitable does not mean that the traditional forms of training are retained. The study mentions an increasing trend towards outsourcing of company training, where by training is shifted to external, autonomous training centers, whose services the company purchases (Wolter & Schwerri, 2003, p. 7). This circumvents the classical dual system; the companies are no longer training the apprentices themselves but instead having the apprentices trained in part or wholly through outsourcing. Two things speak for this strategy of outsourcing: the educational know-how for the company training does not belong to the company's core business, and at the same time it has become so demanding that it has to be delivered by an external service. Second, outsourcing allows cost savings through joint forces of different firms. (p. 8).

This finding is interesting but also very specific. By its very nature it does not say anything about the system as a whole, in particular not about the relation of school and vocational education. Also, the finding is rather conservative, because it does not say much about the concepts of vocational education that are viable for the future in relation to that which is called general education. The third section below begins with this relation and examines the following question: in what direction the system should develop, if it itself responds rather conservatively?

### 3. *The future of "education" and "occupation"*

*Vocational schools* arose, as mentioned above, from a small number of continuation schools, later also *trade schools* and a few *technical schools*, that for a long time received no government privileges. The origin was not by chance the Sunday schools. The schools were

actually courses, the time for which only existed on Sundays. They had a narrow mandate that was actually diffuse with regard to education, because it was actually the development of the public school that was justified on the grounds of preparation for life and work. A school for all should be sufficient, was long the maxim of the education policy, which did not foresee a dual system, because there was not such a system originally.

Only with the establishment of a vocational school system of its own did the elementary/secondary school become autonomous in the sense that it could take up the cause of general education. Its greatest success, so to speak, was the establishment of a vocational school that was independent of and followed compulsory schooling and had its *own* educational task to fulfill. From now on, the distinction could be made systematically and consecutively between general education and vocational education, as long as there was a *second*, but *higher* general education that concluded with the *Matura* (high-school diploma) and provided access to the academic professions. The point here is that universities up to today do not like the attribution that they prepare students for occupations, because that would make them appear to be vocational schools.

Education was institutionalized in these ways, without eliminating the historical differences. On the contrary, they determined the development for a long time; education via the school meant the building up of elementary and secondary school, the vocational school, and the *Gymnasium* (university preparatory high school) as *separate* institutions, each having its own tasks and interests. Decisive up to this day is the more or less strict differentiation between “general education” and “vocational education,” which is not so much convincing in content as is the fact that their institutions follow each other, one after another. They are not entwined but are instead separate because they are consecutive. The same holds for “lower” and “higher” general education.

A peculiarity of the vocational school is that it must in itself once again reflect the difference of general education and vocational education, also without a guarantee that they will fit. In the new Swiss Professional Education Law, there are three learning sites for transmission of vocational basic education,

- the company or other institutions for “education in vocational practice,”
- Berufsfachschulen (for general education and theoretical knowledge in the respective occupational field),
- and courses, or third learning sites, for additional occupational practice and scholastic education

(*Bundesgesetz Artikel 16, 2*).

Education for work means at the same time the acquisition of certain vocational skills, the relevant theories, *and* accompanying general education, but the three parts are not always harmonious. The underlying idea is still that the young person is *being equipped in preparation* for something that is being reliably anticipated in terms of what it will demand, and which will be more easily possible with the occupational skills than with occupational general education. Generally, the addressee of “general education” is difficult to determine, General education is useful in the public sphere, but the political public does not voluntarily make statements about levels of education or even demand them. The standards are defined by the schools, which, however, are not responsible for their application later on. The school’s responsibility ends with the certification, which is only meaningful, however, if it goes beyond the school.



Education is represented with one's own person – and this in every respect. There is not one education for general life and the other for work life, but instead always only learning acquisition with a view to one's own person. This also holds for knowledge and abilities, but also for style, disposition, and behavior. Decisive for the credibility of the presentation of education is not lexical omnipotence but the individual ability to link different possibilities. As nobody can know everything, it makes no sense to compete with encyclopedias. Education means being able to find one's way, able to recognize the problems and the connections without recoiling from them. At the same time, if I am correct in this, education is acceptance of the levels in the learning process, which only takes place if difficulties can be successfully overcome. If you know that you have a difficulty behind you that you have overcome, you can imagine the next higher level as not insurmountable. If you take it easy, because no demands are made or because they seem insurmountable without inconvenience, you lack this experience of measuring out effort. At the same time, you lack awareness of the increasing ability that is fundamental for every form of education.

The constant repetition of historical contradictions does not improve the performance of the education system, not does the associated, tedious discourse guarantee that this system operates with the correct semantic strategies, that is: one side just claim progress so that the other side can seem outdated. This is no small problem: If the reform language constantly stands in the way of practice, then awareness can hardly arise as to priority, inferior, and trivial goals – that is, the priorities of system development can hardly be determined. But precisely that is itself a necessary priority, for at least three reasons:

1. Public education systems are increasingly put into competition.
2. Competition also means strengthening of private competitors.
3. Competition forces one to focus on strengths and optimal use of resources.

The language of educational ideals leads us to find statements like those above to be dreadful, but occasionally the horror can actually teach us, allow us to recognize the drivers of the development and to take steps to adapt the system in time. An education system that does not constantly provide evidence of its performance will not be able to keep step with the international competition. Consciousness of this has to develop, and that requires insight into the risks. There are plenty of alternatives, and every deficit in the public system will provide an incentive to private suppliers, assuming that the customers of the system may choose and are not dependent upon a monopolist. In many parts, education has since become a business, if you look not only at the development of the public school but also the entire education market, which is now developing more rapidly than ever before. Maximilian Berlitz could not have suspected what he was triggering long-term when he founded the Berlitz School of Languages in 1878.<sup>29</sup>

So that I am not misunderstood: My plea is for a strong public sector in the area of education, but one that is capable of putting itself under pressure for innovation. What is today still called vocational education is a good example: the education must respond to the fact that occupational activities, or more generally, the jobs, of the future have two contradictory tendencies:

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<sup>29</sup> Maximilian D. Berlitz (1852-1921) was born of a family of teachers and grew up in the Black Forest, Germany. He emigrated to the United States in 1872 and founded today's Berlitz International, Inc. in Providence, Rhode Island, in 1878. The company marketed an innovative method of foreign language lessons that does not make use of school grammar or book learning. The teachers are native speakers only, teaching through oral instruction in the target language exclusively.

- They are becoming more *intelligent* – that is, they demand more cognitive abilities than ever before,
- And they are becoming more *trivial* – that is, they demand hardly more than situation-bound know-how.

Many jobs in the service sector require no training. Selling hamburgers requires no cultivation, and just as little dependent on education is the presentation of images and looks, models of all kinds. Talent for comedy shows on television can school itself and needs only constant feedback from the public. Today's music stars do not have to be able to sing in order to be successful, and moderators of game shows do not need an education. All of that can secure employment and income, and would thus be an occupation in Weber's sense, but it does not require training, at least not training that could claim to be "vocational education."

Linear calculations of educational success and numbers of diplomas and degrees on the one side, and increased economic returns on the other, have been criticized recently, so that the economic predictions behind PISA seem questionable (Wolf, 2002). If the predictions were true, Switzerland would have to be a poor country. Alison Wolf (2002), professor of education in the United Kingdom, describes the problem as follows:

I find it difficult to construct a convincing argument that more six-form qualifications and more degrees are needed so that people will be educated enough to stack shelves, swipe credit-cards, or operate a cappuccino machine effectively. And it is important to remember just how many jobs like this exist, because to listen a lot of the rhetoric you would think that every semi-skilled or unskilled job was going to vanish tomorrow, if not early this afternoon. (p. 49)

This is a commentary on the rhetoric of the knowledge society, which speaks as if the labor market is waiting for every pupil to leave school with university preparatory qualifications in their pockets. Education may be called, using a somewhat crooked metaphor, a "resource," but in the end there are various forms, not one form for everybody.

Education is only worthwhile if quality is produced – that is, when real competencies or strategies of problem-solving arise that would not come into being without education. For many services, simply talent or distinctive everyday features are often sufficient. The marketing of beauty, for example, or of distinctive features altogether, demands image-making and professionalism with regard to image-making but education and training is not necessary. Education investments must be made in areas where there is a true need. When jobs become intelligent, and intelligence must constantly improve – this holds also for many areas in the services sector – then constant learning performance is required that demands ever new education but education that fits the problem or the project and not education that just takes up time. In this sense, education becomes a service that is in demand if it proves to be highly useful.

The long years of basic education are being criticized everywhere; the entire area of education faces efficiency problems; in many places there are attempts that go in the direction of supply that exactly fits demand, that replace rigid curricula or parts of curricula. We find ourselves insofar in the middle of an experiment that in the end is about the educational welfare state. The shift in vocational education towards a flexible organization of learning that is able to react rapidly to real problems and in this way secures its own demand is a test for the whole system. The future of the system is not secured if lessons are simply held, rigid guidelines are supposed to be upheld, and ultimately EU norms determine performance. The

art of educating is not defined by ISO standards but rather by the actual yield; mere standardization does not lead to meaningful education – it is education that determines learning ability. There is then no longer a discrepancy between education and work.

What can or must be done in order to improve the education system overall, without the old opposites of “general education” and “vocational education” once again coming into play? I have five suggestions<sup>30</sup> that relate not to the term education but to the education system:

1. transparent and innovative planning of the transitions
2. competence-related, continuously adaptable educational standards with new forms of quality assurance
3. innovation ability and self-responsible learning
4. project organization and elimination/qualification of the contradiction between learning and work
5. build up and develop education centers at the upper secondary level.

Vocational education does not begin at rock bottom. Many problems come into being because two different organizations and cultures are handling education, which have little to do with one another. This is also connected with the non-consecutive responsibility for education. The elementary/lower secondary school (compulsory education) is responsible for its area but not – with its product – also for the learning quality at the transition to the succeeding types of education and training. The transitions are regulated only formally, through grades and certificates that are not subject to general standards. Grades and reports communicate the judgments of individual teachers that more or less well describe the class average without any relation to general norms or standards.

But it is not just that the school taking in the pupil must take what comes without being able to truly influence the quality criteria of the school passing the pupil along. It is also that the introduction of the compulsory length of schooling is still largely rigidly organized. This is true of the time economy of the school in general, and at least in some sectors, it should be reconsidered. A pupil in the ninth grade who with a lack of motivation reduces learning effort to the absolute and teacher-insulting minimum because the apprenticeship agreement has already been signed, or because there is no such apprenticeship in sight, must be given alternatives. And this holds generally: It makes no sense to simply run through the curriculum when nobody is learning anything because of a lack of motivation.

If in future flexible changing of occupation, or better, gainful employment, becomes the rule, then vocational education can not just simply be divided up into lines of business or sectors that have little or nothing to do with one another. Ultimately, the dovetailing with the occupational area and its development will be decisive. The crucial point is that new and old “occupations” are *no longer* occupations in the classical sense. In the end, vocational education has to manage without occupations and learn to focus on continual company problem solving. What was once the reason for the vocational schools, the form of the closed course, has educational value today only in certain segments and must be evaluated in consideration of the fact that knowledge in professions does not lose but gains in importance, but disintegrates more rapidly than ever and is learned differently than in the past. For that reason, successful know-how is of central importance at work today, not knowledge for life.

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<sup>30</sup> Assuming that other reforms, such as *Berufsmatur (qualification for vocational academy)* or the development of the universities of applied sciences, are continued and determine the framework.

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