

GLU: Apprenticeships in Uddevalla
Success factors of a new form of education in development

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Introduction

Apprenticeships in upper secondary school are a new approach in Swedish vocational education. Over the past 100 years, Sweden has relied mainly on school-based vocational training. In the relatively short period since apprenticeships have been incorporated at the upper secondary level, a common pattern in the results has emerged at many different schools. Apprenticeship involvement led to increased employability as well as good student performance in general subjects. In the last seven years, nearly 300 apprentices have graduated in Uddevalla; 90 percent of them have taken up jobs or pursued higher education. Similar results have been documented at several other schools in different parts of Sweden.

One may think that creating apprenticeships is thus an easy and obvious decision, but there can be no shortcuts in creating a high-quality program. To organize a functioning apprenticeship program, one must structure the educational experience such that it is suitable for apprentices. The apprentices are at the workplace more than half of their time and in school the rest of their time, and they need a good organization both in both locations. The vocational teacher must follow up diligently on the apprentices' learning process. A crucial part of program management is the coordinator, who is responsible for the apprentices' situation both at the workplace and at school. All this can work only if the school and the workplace share a good understanding. The trainer should have received education training apprentices, and there must be a dialog between the vocational teacher and the trainer about the curriculum.

Purpose

This is not a scientific study or a systematic report on apprenticeships in Sweden. It is a summary of observations by one deeply involved leader, accompanied by some national overview information. When this report was written, I was serving as national coordinator for Swedish apprenticeships. In that position, I was responsible for developing apprenticeships at a national level.

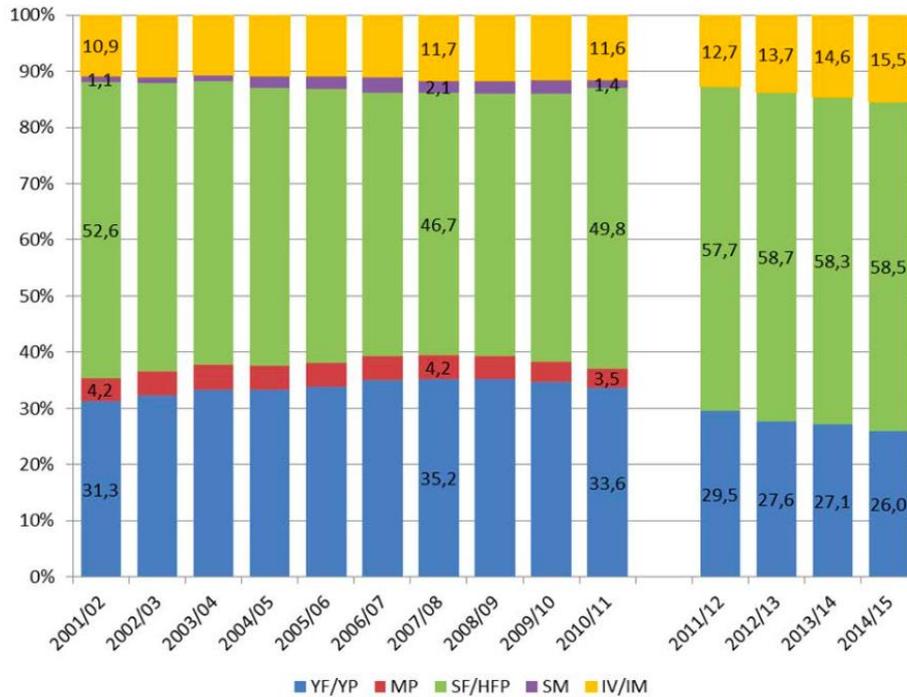
In this paper, I will describe the organizational steps and the quality markers that have been crucial for the apprenticeship program as it has developed in Uddevalla, enabling it to make such good progress. I will also try to put the apprenticeship activities in a historical context to understand the model applied in Uddevalla.

The Swedish context for apprenticeships

Apprenticeships at the upper secondary level are a new form of education in Sweden. For the last 100 years, we have supported school-based forms of vocational training. (See below for more information on this point.) Beginning in 2000, we made several attempts to incorporate work-based forms of education. Some of them functioned like an apprenticeship; others were more akin to general career training with less focus on a particular profession. In 2008, apprenticeships were introduced for a three-year trial period (försöksverksamheten med gymnasial lärling); since 2011, apprenticeships have been established as a permanent form of vocational education.

In Sweden, as in many other countries, student interest in vocational education has been declining. By introducing apprenticeships, the government is trying to counter this trend. Increased employability and a better match between the vocational training received and the real work that one would perform at a permanent job are the main focal points.

This chart shows the percentage entering various types of programs in their first year of upper secondary education. The blue bars represent the proportion of students who entered a vocational education program; theoretical programs are marked in green and individual programs in yellow. The chart shows the considerable decline in the percentage of students entering vocational programs in the last five years.



Source: PM, Elever i gymnasieskolan läsåret 2014/15, Dnr 2014:556

In the most recent reform of upper secondary school education, Gymnasieskola 2011 (GY11), the government tightened requirements and also established a greater distinction between vocational and theoretical education. Graduation from a vocational program in Sweden no longer automatically qualifies the graduate to pursue higher education. Until 2011, any upper secondary education degree made a student eligible to apply for higher education (with special requirements for some higher education programs such as engineering, medicine, and law). To be considered for higher education after a vocational program, the student must take extra courses in Swedish and English. Some argue that the main reason why many youngsters and their parents do not choose a vocational program is that they think the theoretical program gives them more choices later in life. In my opinion, there are several other reasons why young people do not choose vocational programs; the question of eligibility for higher education is not the only issue. But at this time (September 2015) the government wants to change things back to how they were before 2011, when all programs were viewed as sufficient preparation for higher education.

Development of apprenticeships is one way in which the Swedish government is trying to make vocational education more attractive for young people and for the labor market. In political discussions about apprenticeships, some politicians have stated that apprenticeships provide an education for young people who do not like theoretical studies in school. The traditional school setting, they have argued, prevents many young people from graduating because they have problems with theoretical studies. These political leaders have contended that it should be possible to become vocationally trained with less study than is needed to pursue higher education. This idea was already in place with school-based vocational training, but the discussion about apprenticeships arose from the question of whether there should be a more practical education option, with a syllabus framework geared to the specific workplace and individualized

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to the particular student and situation. However, other politicians and many representatives of various industries did not agree with setting lower requirements for apprenticeships. They feared that doing so would lead to concern about the apprentices' education level, making them less employable. This argument was ultimately persuasive, resulting in the decision to have apprenticeships with exactly the same contents and curricula as school-based education. "Two ways to the same vocational qualification" is how the government now explains the existence of two different forms of vocational education with the same goal. The apprenticeship must be a high-quality education.

History

A short historical explanation is useful in explaining how the earlier Swedish apprentice system disappeared and was replaced by school-based vocational training. One part of the explanation involves the political and labor market agreement reached in 1938, called *Saltsjöbadavtalet*. This was a master agreement signed between the Swedish Trade Union Confederation (LO) and the Swedish Employers' Confederation, and it became the model for other agreements. From this point on, it functioned as a sort of contract ensuring that the government would not interfere with the labor market. There are, for example, no minimum salary laws in Sweden; the system rests on mutual trust between the employers and the unions.

The long dominance of the Social Democratic Party, *Socialdemokraterna*, and the strong connection between this party and the unions constitute the other part of the explanation. After 1846, when the guild system was abolished, many companies misused the employment status of "apprentice" to lower their employees' salaries. Young workers were called apprentices but didn't get any education—just a low wage. This annoyed the unions, who tried to eliminate the apprenticeship form of education and supported engineering schools and school-based workshops instead.

The history of creating factory schools, workshops in schools, and other forms of vocational education in Sweden started around 1920. Not a great number of factory schools existed before 1945. After the Second World War, the need to restore Europe after the bombings demanded skilled workers. This urgent priority affected Sweden as well as other countries, even though Sweden was not directly affected by the wartime attacks. The Swedish answer to the great demand for skilled workers was to support more factory schools (based on school-based learning).

Around 1970, Sweden carried out a significant reform of its education system with two notable features: one additional year beyond the eight years previously included in compulsory school, and an upper secondary level for vocational training. The vocational training programs were two years long and the theoretical education programs three years long. In 1994, in the next education reform, the government extended vocational education to three years of school-based learning and added workplace training. The idea was to give the students training at work and help them establish contacts so that they could get jobs after graduation. The effect on the actual educational programs was minimal. In many schools, however, the students did not get any workplace training because of the difficulty of arranging placements. The connection between the students' education in school and their later work became (and still is) weak. The reforms designed to support the labor market with skilled workers have unintentionally created a gap between education and the workplace. Another negative aspect of the model is that the workplaces have had limited formal impact on the education delivered. A paradoxical result is that the workplaces are asking for fully trained labor from the schools but are not always happy with the result (Olofsson, J., A. Panican, L. Pettersson, 2008).

One strength of the model with workshops in schools is that business cycles do not affect Swedish vocational training. Even during a slow business cycle, the capacity to educate skilled workers is not affected. The big problem is still, however, the weak connection between the schools and the workplaces. Today we focus a lot on how to give the branches and workplaces more influence in the vocational training. The main aim is to get a better match between the skills that a graduate has developed and the real

requirements of a particular profession.

The new apprenticeship in Sweden

I will now describe some crucial aspects of the practical management of the apprenticeships in Uddevalla. As part of the 2011 reform of upper secondary education, Gymnasieskola 2011 (GY11), the standards for vocational education were strengthened. Each vocational program must now have at least 15 weeks of workplace education. The big change that has made the greatest difference, however, is the new form of apprenticeship. In this form of education the apprentices are at a workplace for more than 50 percent (or more than 55 weeks) of their total educational time—or a lot more than the 15-week minimum for vocational programs. In comparison with other European apprenticeship systems, Sweden's gives the student a quite different status, as the apprentices are not employed. Rather, they are students getting only student aid and no salary. Since 2013, becoming employed during the apprenticeship has been possible, but only a few apprentices in the whole country have gained this status.

The contents of a vocational program are guided by the curriculum, which describes the goals of the diploma. The Swedish education system stipulates the goals to be achieved at various levels, beginning with year three of compulsory school, with new goals for years six and nine. Upper secondary school has specific goals for each program. The programs are divided into subjects and the subjects into courses, each with its own established goals. In order to graduate from a program, you must achieve all goals in all courses. Grades depend on the quality with which you attain the goals. A graduating student has about 25 graded courses in the diploma program; the courses depend on what program the student is attending. Vocational programs have specified goals for carpenters, mechanics, etc.

Vocational education, a programme overview:

General subjects – 600 points Swedish, English, mathematics social science, history etc.
Vocational base courses – 400 points Common for all the program
Branch orientation courses – 300 points
Vocational specialization courses – 900 points
Individual choice – 200 points
Examination course – 100 points

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To get a diploma, the learner must reach 2,500 points. Each course carries a specified number of points. Grades are awarded based on the achievement of goals in every course. Normally a course (for example, English or mathematics) is worth 100 points, but in the vocational subjects there are several courses worth 200 points or more. The normal program length is three years, so students must attain about 800 points each year.

An apprentice has to spend more than 50 percent of his or her time at a workplace, and a contract with the workplace is needed. In the contract, the school must define what parts of the student's education will be delivered through work-based learning.

This chart shows an example of how the division between school-based learning and work-based learning can be planned.



Note: The green area represents how much each category of courses can be learned at a workplace.

In this schematic description, green (shaded) area represents the portion of the educational program that can be delivered through work-based learning. The vocational teacher and even the teachers of general subjects must decide what part of each course can be learned at the workplace. The status of an apprentice is defined in terms of time spent at the workplace (at least 50 percent). It is the vocational teacher's responsibility to determine what parts of the content can be learned at a workplace.

In the Swedish model of apprenticeship, there is no committee (as in Norway) or chamber of commerce (as in Germany) responsible for certifying workplaces as suitable for education. Nor is the government or the National Agency for Education involved in approving workplaces. The vocational teacher is the only person guaranteeing the quality of a workplace. This is done by examining the typical daily work done at the workplace. The vocational teacher compares the steering documents for the vocational subjects with the workplace and decides if the workplace is suitable to provide the necessary education. If it is, the apprentice can complete the vocational training at a single workplace. If the educational potential is considered too limited, the vocational teacher will find complementary workplaces for the learner.

An other means of providing good quality is educated trainers. The law encourages workplaces, through the incentive of additional funding, to have a trainer who is properly prepared for the task. The National

Agency for Education provides web-based trainer education.

The government provides quite substantial grants to workplaces participating in apprenticeship programs. Slightly more than one-sixth of the money is conditional upon having certified trainers (as described further below). In my judgment, the government grants have been a crucial component of the Swedish apprenticeship program. In the early 2000s, there were some trial apprenticeship programs with little or no government funding, and each one attracted only a few apprentices. When the trial period started in 2008, with government grants of 2500€ per apprentice per year, participation quickly increased.

This chart shows the number of apprentices in each school year from 2008 to 2015. The measurement was made each spring semester.

2014-2015	7,604
2013-2014	6,535
2012-2013	6,764
2011-2012	8,015
2010-2011	9,617
2009-2010	6,914
2008-2009	3,609

Source: Skolverket 2013: Utvecklingen av lärlingsutbildningen. Rapport 397, 2013.

The numbers in the preceding chart show the rapid growth in the number of apprentices from 2008 to 2010. There are some interesting facts behind these figures. Many private schools initiated apprenticeship programs, as this new approach and the government funding were more attractive to private than to public schools. During this period, many schools accepted apprentices but were not prepared to deliver a properly organized education. (In my opinion, they were actually treating the government grants as pure profit.) As a result of poor management, bad follow-up methods, and poor planning, there were many dropouts from apprenticeship programs during these early years. From 2011 to the present, there have been fewer dropouts, as the low-quality programs have disappeared from the scene and more public schools with a long experience of vocational education have become apprenticeship schools. The government has also changed how the government funds are applied. Most of the money goes to the workplaces; schools receive a smaller portion for developing and managing the programs. Today the dropout rate for apprenticeships is the same as that for school-based vocational education.

Government grants (per year except where otherwise noted) to the school, workplace, and apprentice are as follows:

Funds for development to the school	1,000€
To the workplace	4,750€
To the workplace if the trainer has received trainer education	1,000€
To the apprentice, extra student aid <i>per month</i> (normal student aid is 105€)	100€ (total 205€)

As stated above, the government grants were essential in encouraging the development of apprenticeships. Some schools embraced this new form of education and made good progress, attracting students and maintaining strong program quality. But the overall picture of apprenticeships was tarnished by the initially large number of dropouts. The media and politicians tend to focus on this negative, and apprenticeships became associated with dropout problems. Another problem was (and still is) that apprenticeships are considered a form of education for young people who lack the motivation and/or ability

to complete a traditional vocational training program. These two problems continue to hamper the progress of apprenticeships. A major aspect of developing apprenticeships in Sweden involves explaining how this form of education can be successful.

In January 2014, the Center for Apprenticeship at the National Agency for Education (Skolverkets Lärlingscentrum) was created with the mission of helping schools to introduce and enhance the quality of apprenticeships. Perhaps this center's work in disseminating ideas and improving understanding of the apprenticeship approach has made some difference in the number of apprentices. After several years of decline, the total number of apprentices nationally has begun to rise again.

Uddevalla's apprenticeship program

In 2006, two years before the trial period of apprenticeships began in Sweden, Uddevalla established its own project with apprentices. This effort has become a model for teachers, coordinators, headmasters, and school administrators to learn from. The team involved in apprenticeship education is very important. One important characteristic of team members is that teachers and coordinators must believe in the apprenticeship form of education and want to develop a high-quality program. Good luck and hard work together made a good start.

Two things should be noted about how we started in Uddevalla. First, we accepted only 12 apprentices, in six different occupations. With only 12 apprentices, there was a competition for the slots. High grades in compulsory school were needed for acceptance. Second, we placed the 12 accepted students in a separate "apprentice class." This was a wise move. The class became a social community for the apprentices from the start and gave them a distinct identity that they still care about. This has become one of our most important success factors.

Today, Uddevalla has more than 190 apprentices, divided into three parallel classes each year. We have organized mixed apprentice classes with about four different vocational programs in each class. They follow a schedule with two days per week in school and three days at work from start to finish, except for the first six weeks when they get an intense introduction to their chosen vocation. There may be only one apprentice in a certain vocation, but the typically group are about six apprentices. It is possible to have only one apprentice in a particular vocation because the class as a whole has about 20 apprentices engaged in completing the school-based part of their education. Of course there is an economic reality to take into account. It is expensive to provide instruction to individual students or a small group. Therefore it is important for the school's finances to teach in a larger group when possible as in the example general subjects.

In the startup process, we received considerable help from a network of schools who started at the same time as or before Uddevalla. Most important was the community of Tjörn, near Uddevalla on the west coast of Sweden. The inter-school cooperation consisted of discussing problems and borrowing materials from each other. This saved us some time and energy.

Success factors

From the beginning and in subsequent years, it became obvious that things were in good order in Uddevalla. The National Agency for Education noticed the progress there. During the 2008–2011 trial period for apprenticeships, a government committee (called the National Apprenticeship Committee) completed a report on successful schools, and Uddevalla was one of the two high-performing schools identified.

This led to an attempt to describe what produced Uddevalla's success. We believe that there are five key factors, all of which are transferable to other schools anywhere in Sweden and perhaps even in other countries:

1. Centralized apprenticeship management
2. A community of apprentices in their own classes
3. The coordinator
4. A new role for the vocational teacher—and good documentation
5. Training for trainers

Let's look briefly at each of these factors.

1. Centralized apprenticeship management

Why is it important to point out this success factor? It is all about the context, both historical and practical. Swedish vocational education has been school-based for a long time, more than 100 years. The normal way of managing education has been the school-based way. Because of historical considerations, the new form of apprenticeships has been met with suspicion by vocational teachers, schools, businesses, and unions. The vocational teachers have had the branches' trust for a long time and have wondered if moving learning from school to the workplace represents some kind of rejection of their work. Some of the resistance has come from workplaces, but this is mostly due to lack of information about this new form of learning. The unions and the branches at the national level are suspicious because they are afraid that they will end up being more responsible for delivering education and that it will cost them a lot of money.

The biggest objections come from schools, mainly from the vocational teachers but sometimes also from the headmasters. The vocational teachers are afraid that their knowledge is not valued. They pose questions such as "Is someone else going to educate the students? Am I not needed?" There is also a fear of becoming expendable.

The early reputation of apprenticeships has posed another barrier. The many dropouts during the trial years created this problem at first, but there remain other problems related to program management. The most common mistake in schools that have tried to establish apprenticeship has been to let one, two, or a few students become apprentices while remaining part of a "normal" school-based class. For example, suppose that two students want to be apprentices in a class of 20 carpentry students. The two apprentices leave their classmates more than half the time every week. Their classmates are in school and maintain their social connections in school. The apprentices are left outside the community. The teachers at school have to deal with the fact that two students are not in school but at their workplace half the time. The apprentices become the exceptions; in the worst-case scenario, they are not remembered at all. This situation has caused many apprentices to drop out. Vocational teachers familiar with this kind of experience are not very interested in supporting more apprenticeships.

That is the reason why the Uddevalla upper secondary school system has pointed to a centralized school management area for the apprentices as a key success factor. With this centralized organization, we can make sure that we are employing vocational teachers who are convinced that the apprenticeship program is good for the students, for the companies, and for the school. We can put the apprentices together with other apprentices in classes created especially for them. We can mix apprentices from different programs in general subjects, which is good for the economy. It is possible to create a special schedule just for the apprentice classes. This approach creates an identity and a sense of pride about participating in an apprenticeship.

2. A community of apprentices in their own classes

Having an apprentice class with apprentices from many different vocational programs is crucial not only for the apprentice's well-being but also for planning the educational delivery. The apprentices have chosen to learn in a workplace more than half the time. This affects how you plan and organize school for them. Apprentices need a schedule that accommodates their situation of being at a workplace three days a week. They need to meet with their vocational teacher regularly in school to connect practical learning situations

to theoretical knowledge. The teachers in general subjects need to understand what it means to be an apprentice. Finally, the apprentices are young people who want to meet other youth and be part of a community. School is an important arena for social life, so apprentices still want to belong to their school. Spending two days in school and three days in a workplace means that the apprentice has a learning program that contains great variation. Quick applications of learning can be made from theory to real work situations, resulting in better learning experiences and, for some apprentices, greater motivation to learn. Being away from school three days a week also means that you have to remember and organize your homework on your own. That is challenging for some of the students and requires self-discipline.

A bonus effect gained by organizing common apprentice classes with apprentices from several vocational programs is the chance to mix vocational programs together to obtain gender equality. For example, by mixing health care apprentices and carpenter apprentices, you can get a roughly 50-50 balance between boys and girls.

3. The coordinator

The coordinator is at the center of the educational program. As apprentices move back and forth between school and work, it becomes very easy to lose control over the apprentice situation. Having several employees involved at the workplace and many teachers in school may paradoxically lead to a situation in which no one is taking full responsibility. The coordinator's task is to link the school and the workplace. The apprentice must experience *one* education, even though it consists of two parts and is divided in time and place. The coordinator is responsible for securing workplaces, training contracts, the work environment, special work clothes, education for trainers, and many more items. The coordinator is an extra contact person for the workplaces. In this way, the vocational teacher can offload some of the administrative tasks related to workplace learning and can instead focus on pedagogical issues.

An apprentice has four different professionals taking care of the education. The class superintendent handles typical questions at the school. The trainer in the workplace is the master and role model at work. The vocational teacher is responsible for the quality of the vocational training delivered at the workplace and for ensuring that the education conforms to the government's steering documents. Finally, the coordinator is the link between all those people. This is a new role in the Swedish school system alongside the ordinary staff.

4. A new role for the vocational teacher—and good documentation

The Swedish curriculum for vocational education is described in steering documents and time plans for all subjects and courses relevant to the specific education program. The courses are designed for a school-based process of learning things in steps, from a simple to a more advanced level. An apprentice is not learning things according to a predictable regimen. Rather, he or she tends to learn about whatever is happening at the workplace at a given moment. An apprentice in health care, for example, may be involved in caring for a stroke patient during his or her first semester in the workplace. In the school's education plan, this was a topic to be learned in year three. How should the vocational teacher deal with this? All learning is progress, of course. The vocational teacher must have the experience and broad knowledge of the steering documents and the content of all courses to respond effectively to this particular learning moment. Accurate documentation is needed, along with thorough feedback to the apprentice. The vocational teacher must maintain close contact with the trainer about the apprentice's tasks and quality of performance. Twice each semester, the vocational teacher, trainer, and apprentice come together in a three-way conversation to reconcile what has been learned. The teacher must rely on the trainer's judgment but retains sole responsibility for putting the grade.

Another way for the vocational teacher to follow up on the apprentice's learning is the logbook. The apprentice is supposed to write in the logbook every day and send it to the vocational teacher once a week. The subjects in the logbook can become a part of a vocational lesson delivered to a group of apprentices or

just the basis for a conversation between the teacher and the apprentice.

The vocational teacher in the apprenticeship is not the master who demonstrates and instructs on-the-job performance. That is the trainer's task. Moving from being the master to supervising and assessing vocational training is a change and a challenge for the vocational teacher. It requires spending time visiting the workplaces, which must be accounted for in the headmaster's planning of the teacher's time. This is crucial for this form of education in the Swedish model, because the vocational teacher alone is responsible for assessing the apprentice's work skills. Given this important responsibility, it is equally important for the headmaster to ensure that the vocational teacher is actually visiting the workplaces. To make sure that everything is done properly, the teacher maintains a journal on the visits, available for the headmaster's inspection.

Following up on the apprentices' social and health situation

In Sweden there seems to be many young people who are not feeling well. To handle temporary problems and more permanent special needs (such as dyslexia), the school are providing a health care team composed of five different functions working together: the school nurse, social officer, social pedagogue, teacher for special needs, and career guide. It is not easy to give support to apprentices, since their time in school, which is the only opportunity for them to receive this support, consists of only two days a week. Thus, the expertise gained from professions other than teachers is necessary. It gives the teachers confidence to concentrate on the vocational training.

5. Training for trainers

From the start of the apprenticeship program in Uddevalla, we have had a clear idea of how to train trainers in the skills involved in teaching a young apprentice. When you teach something to someone else, you also gain a fuller grasp of your own knowledge. When you realize what you have mastered, you also begin to recognize what things you have not mastered. As a result, you can improve your own workplace knowledge and other competencies. The training provides a deeper understanding of upper secondary school, the vocational programs, how to award grades, the nature of young people, how to be a good pedagogue, and even CPR training. The contents are important, but perhaps it is more important to meet other trainers and learn from their experiences. What do we have in common? What can we learn from each other? The school invites trainers to these training sessions four times per year. Each session lasts for two days and means you have completed the training. Trainers who have earned a certificate from the training course can receive 1,000€ extra in government grants. That is highly motivating—especially in male-dominated workplaces!

Why is the apprenticeship program in Uddevalla successful?

Although I have just listed five success factors, this list is not really an answer to the question of why we have succeeded in Uddevalla. If I had to pick three things from my description of the program that make the apprenticeships in Uddevalla successful, I would select the coordinator's role (organization), a systematic follow-up system (quality), and the ability to work together around the apprentice (collaboration).

When we started this new form of education, we did not know how to do it. We did know that a substantial part of the education would occur at workplaces. To manage the contacts, the contracts, and all other practical business, we hired a coordinator from the start. After a while, this function became crucial to the program. As described above, the coordinator serves as liaison between the professionals and the apprentice, as a kind of catalyst and "quality engineer." The schools that have tried to start apprenticeships without having someone in this function describe vocational teachers as carrying responsibility for many different items and feeling some frustration over not doing well and being saddled with far too many tasks. I have come to the conclusion that if I were to start a new apprenticeship program

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at another school, my first employee would be a coordinator.

Most important is collaboration. We have a good system of working together around the apprentice. All the teachers, the trainer, the health care team, and the headmaster are prepared to cooperate and not work separately. Working together is much easier said than done, but this is in fact the most important key to success. By developing documents, meetings, forms, contents for the workplace, checklists, logbooks, etc., we have established tools for managing educational delivery. But they create no quality education unless they are used and understood by all the professionals involved.

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