

Chapter 2

Small Points, Great Effects: On the Introduction of a New Artificial Currency

Lecturers have to draft the syllabus for their classes in such a way that it is feasible for the students within the time given in the module handbook. This means that the readings from the curriculum plan have to be able to be read and understood by everybody within the given 2 or 4 h. The lecturers then have the problem of choosing texts that satisfy these conditions because not all students read equally fast. The module handbook's specifications could also be interpreted thus: for example, you read a text for 4 h and then stop, regardless of whether you've got to the end or understood anything. However, that was never stipulated in any of the sessions I attended.

(EXCERPT FROM A STUDENT'S LOGBOOK)

Actually everything is quite simple: teachers think of the planning and implementation of degrees in terms of 'sessions'. They consider which seminars, lectures or tutorials should be compulsory, which can be optional and which may be voluntarily chosen. They also weigh up how many sessions in a year should be completed with a performance record. The course planners estimate approximately how much time students need for preparation before attending a seminar, for the development of presentations or for writing a term paper. A trial and error method is thus applied which, after a time, develops into a more or less realistic student workload.

Students too are forced to prepare themselves and the calculation of their workload according to this 'contact time' with their teachers. Of course, students do not know exactly how much time they will need for every single list of readings or for the preparation of different presentations, but during the course of their studies they begin to get an idea of how long they will spend in lectures, seminars and tutorials and how much time they require to be able to pass their exams. By getting to understand their own learning speed, they are able to estimate the necessary amount of work required to pass their degree.

Planning a degree in this way has a long tradition. During the emergence of the first universities, the principal method of imparting knowledge was often very one-sided conversations between teachers and students. From the seventeenth century, different types of teaching formats—be it lectures, seminars or tutorials—were set up in an attempt to give these conversations between teachers and students a

clearly-described temporal, objective and social framework defining when the teaching takes place, what it is about and who is taking part.

Through the Bologna reforms, this relatively simple formula for planning degree programmes has been complimented by an additional element. From now on, teachers, students and especially those working in the ever-growing administration office have to take this into account. Since the introduction of Bachelor and Masters' programmes, every single hour that a student spends in lectures, exams or internships, or on preparation and follow-up work, has to be calculated in so-called ECTS points (also called credit points or credits). To be able to count these ECTS points, the universities in most European countries have combined all the seminars, lectures and tutorials for one subject area into 'containers'—variously named modules, learning blocks, course units or building blocks—to make it possible to test knowledge acquired in various modules through exams.

Following the observations of education researchers at the universities, ECTS points were compulsorily introduced as their own kind of 'artificial currency'—incidentally, this occurred at almost the same time as the Euro was brought in as a common currency. With the designation of ECTS points as a 'type of international currency', a 'common currency', 'educational currency' or as a 'currency for university education', educational researchers made it their primary goal to achieve the comparability of students' study performance. Just as having Euros in your pocket made cross-border travel easier than travelling with many different currencies, it was hoped that the ECTS currency would encourage travel across educational borders. In the past, a primitive hunter-gatherer system ruled the universities, under which every institution could produce its own 'notes' that could only be exchanged for a degree certificate at that university. Now, a uniform artificial currency has been created which in principle allows for the comparison and transfer of credit points worldwide (cf. Adelman 2009).

In the typical language of European bureaucrats, ECTS points "are a quantitative measurement for a student's overall burden". With this technocratic-sounding definition, some lecturers abandon any concern they may have had for understanding and comprehending this artificial currency, particularly if they are only interested in conducting successful lectures for their students. It therefore took some time for all the teachers and students to painstakingly learn that the units, often also called performance points, do not express a euphemistic description of grades; and this just added to the general confusion. Rather, they measure the hours that the 'average student' spends on preparing material, revising, writing a term paper, finishing an internship or producing a thesis.

For most universities, the introduction of this new form of time calculation was accompanied by the dramatically-worded rhetoric of a 'paradigm shift' from a 'teacher-oriented degree' to 'student-oriented studies'. It is claimed that while the planning of degree programmes was formerly based on the 'teachers' contact time' with their students, the introduction of the new artificial currency would systematically take the student's entire time expenditure into account. The rhetoric of change from a teacher-oriented to a student-oriented degree appears to have rather limited logic, since 'teachers' contact time with students' is also always going to

be the same as ‘students’ contact time with teachers’. The powerful words ‘paradigm shift’ and ‘Copernican Revolution’ do, however, orchestrate the introduction of the new accounting unit with subtle didactic tunes, to detract from what comes across as boring at first glance.

Using ECTS points, it should therefore be possible to calculate in advance each hour that a student spends on his or her degree—at least according to the ideas of the education planners. This then allows for the general assumption—without having to systematically gather empirical data on actual student behaviour on various degree programmes—that Joe Bloggs and Ann Other in Germany, Hungary, Romania or Belgium study on average 900 h per semester (30 credits, where one credit point is equal to 30 h), while normal Austrian, Spanish and Croatian students spend only 750 h per semester on their degrees (30 credit points per semester, where one credit point is equal to 25 h). The assumed hours per semester are then broken down, by hour, into the precise requirements that students are faced within one semester, be it lectures, tutorial work, revision, exams or internships.

The variations in the number of hours that a student must spend acquiring one performance point is attributable to flaws in the system, caused by its precipitous introduction in the respective countries. The system does not offer an explanation for its requirement of 30 h per credit in Germany, Romania or Switzerland, compared to 28 h in Portugal and Denmark, 27 h in Finland, 26 h in Estonia and 25 h in Austria, Italy or Spain. At first glance it could be presumed that students in Germany, Switzerland and Romania are just especially diligent because they give up more time per week for their degree than the Italians, Spaniards or Austrians, which at least partly adheres to the national clichés fostered in Europe. But because an ECTS point acquired in 30 h in Germany, for example, represents the same standard of knowledge as in Finland for 27 or in Italy for 25 h in the minds of the European education ministers, the logical conclusion would be that German, Swiss and Romanian students simply need longer to acquire the same standard of knowledge than their Spanish, Italian or Austrian counterparts.

The matter becomes even more intriguing when we observe the apparent change in behaviour of students who have transferred to a foreign university since the introduction of the new educational currency. If you believe the logic of ECTS points (or the lack thereof), which has led to different requirements for study hours in different countries, students who, for example, transfer from a German to a Spanish university immediately reduce their weekly workload by several hours. If the system is to be believed, the change to a Spanish university means that students have a few more hours for a fiesta, siesta or tapas bar at their disposal. That is however not a tragedy for the outcome of their degree, because by switching to Spain, these students automatically obtain a boost to their learning efficiency and require five fewer hours for the acquisition of an ECTS point than their fellow students who have remained in Germany. But this just suggests a certain narrow-mindedness about allocation problems among those who point the finger at these inconsistencies. In practice, the transfer of credit points between universities seems to function to some degree.

Leaving aside the small inconsistencies in this educational monetary system, the possibility to determine down to the hour how much time an average student requires is a result of the introduction of the credit point system at every single university. One can precisely calculate that for a three-year Bachelor degree comprising of 180 performance points, in Germany, Hungary and Romania 5,400 h of study are required, while in Austria, Spain and Italy the figure is 4,500. For a two-year Master's degree comprising of 120 credits, a student has to plan for 3,600 h in Germany, Hungary and Romania. In the Netherlands, with their '28 h per performance point' rule, it must be possible to study the degree in 3,360 h and in Bosnia, with a system of '25 h per performance point', it is 3,000 h. It can (and must) now be precisely calculated during the planning of the degree programme exactly how high the outlay is for every lecture, module, examination, thesis and hour spent at an internship. The faculties and departments can then determine themselves whether a seminar is worth 3, 4, 5 or even 8 credit points. At the end of the degree programme they must however ensure that precisely these 120, 180 or 240 credit points are awarded, depending on the country and degree programme.

Hereafter, the metaphor of ECTS points as an 'international currency', 'common currency' or as 'currency for university education' will be revisited—in comparison to other artificial currencies in the economy or the education system—in order to show which differences were brought about by the mandatory calculation of all expected student achievements at the universities in a given time. At the risk of taking the metaphor of ECTS points as an artificial currency too far, we will use it to help us to understand most of the concepts on higher education policy and the concrete operational effects connected with the Bologna reforms.

2.1 ECTS Points: The Central Element to Understanding University Reform

Artificial currencies—such as ECTS points, Airmiles, the tokens from the purchase of a chocolate bar or even the loyalty stamp cards at beauty salons where the tenth treatment is free—are always based on some form of numbering. Considering this, numbers produced through these more or less standardised empirical methods are only able to provide quantified information that lends itself to a specific description of features: the number of students at a university, the number of lunches sold in the refectory or the number of buses to the main campus. But although quantitative information may be useful when combined with other numbers or compared with other statistics, a number is in itself still a long way from being a currency.

These numbers only become a currency when they come with the possibility of 'exchange'. The tokens that are handed out at large sporting events in return for the purchase of a highly-priced chocolate bar have only made it to artificial currency status because they are redeemable against a football, a favourite team's shirt or a

colourful baseball cap. Smileys—to name a rather more primitive form of artificial currency from the education system—stuck in an exercise book by a teacher rewarding good behaviour could be swapped for stickers or other small gifts. Airmiles are earned by using (not necessarily self-paid) flights, saved electronically by the airline and then exchanged as an artificial currency for free flights, hotel stays or VIP tickets to classical concerts.

2.1.1 What Can Artificial Currencies be Exchanged For? A Trade-Off for the Degree Certificate

Artificial currencies differ from monetary currencies in that their possibilities for trade are restricted. While money is in theory suitable for the purchase of almost every product and service, artificial currencies can only ever be swapped for a few precisely-defined products and services. I can't go supermarket shopping with my Airmiles, I can't pay for a bike, travel insurance or a prostitute with my Boots ClubCard points and there's no way I can trade in Smileys for good grades.¹

Before the introduction of the Bologna degree programmes only a very rudimentary form of artificial currency existed in many countries—if it existed at all (cf. for the early 1990s Commission of the European Communities 1993: Annex C). The study regulations stated exactly which proofs of performance were required, in the form of lecture attendance or an exam pass. As a student, the attendance of a seminar or lecture and the composition of a term paper or a subsequent exam pass could be confirmed with an individual certificate. Separate certificates would be awarded for each lecture attended, homework completed or exam passed, and would then be stamped and signed by the professor or lecturer. Students collected these individual certificates in a course record book. This was to be kept as safe as possible, as it was the only record of their achievements. Thus the type and quantity of the certificates required varied wildly from course to course. In some courses, 17 individual certificates were necessary; in others, five certificates in conjunction with other attested achievements were sufficient. But even when all of a student's officially-required individual certificates were gathered together, they could not simply be exchanged for a degree in Physics, Sport Science or Philosophy; rather, the student was now eligible to take his or her final exams. Only when a student passed his or her final exams with the required grades could the final diploma certificate be awarded.

¹ Even monetary currencies are of course only ever artificial, and in a society shaped by money there are limits to what can be bought. Money may make men (or increasingly even women) 'sexy' and it may also be part of the mating game. Through the payment of food, clothes or housing, one of the sex partners may signal his or her generosity. Both men and women usually make sure that sex is not misunderstood simply as being the exchange of money in return for a sexual act.

Before the introduction of ECTS points there had been no attempt to create a functioning artificial currency in the field of education. But using this artificial currency, students can now collect their ECTS points at different universities, save these over a long period of time in their so-called transcripts and then transfer them to their home universities. When they have collected enough ECTS points relevant to their studies, they can exchange these for a diploma from their home university.

‘ECTS’ differs from a whole host of other artificial currencies, and especially monetary currencies, in one central aspect: the acquisition, possession and exchange of the currency are connected to one concrete person. An ECTS point cannot simply be given to a fellow student as a present. The point only has an exchange value for the person who acquired it.

It is precisely this connection to a person which strongly restricts the possibility for exchange, in comparison to other artificial currencies like Boots or Nectar points. While these points can—at least in principle—be continuously exchanged from person to person, and therefore the exchange currency can be converted with great speed, ECTS points can only be exchanged once by the person who earned them for a leaving certificate from his or her university. Once the ECTS points have been redeemed for a degree certificate, they will then be buried in the depths of the university’s computer systems.

2.1.2 How is the Artificial Currency Acquired? The Renaissance of the Labour Theory of Value at Universities

In order to understand how an artificial currency works, it is vital to comprehend how it can be acquired. ClubCard points are awarded when an item is bought at Tesco or Boots. Bonus points from a frequent flyer programme are awarded when your flight takes off (even though the flight is often not paid for by the traveller themselves), for using a credit card, for filling out a questionnaire or even just by being willing to be bombarded with promotional offers for a short period of time, as with the 5 s of adverts that have to be watched on YouTube. With the ECTS system, students attain points that exclusively represent the time that the university estimates is necessary for preparation and follow-up work for a seminar, for attending a lecture or for writing a term paper. These time units can be exchanged for a degree. This conversion has fundamentally changed the way universities are calculating degree programmes.

Before the introduction of the ECTS system, universities were only interested in ensuring that students successfully completed a prescribed number of lectures, seminars, tutorials, term papers and written and oral exams. This was counted in the units of hours per week per semester, which may sound complicated to the uninitiated. This old model is similar to the credit point system in the United States, introduced at the beginning of the 20th century, in which a credit point is

considered equal to approximately 1 h of scientific work in the seminar room, the library or the laboratory. Working at home, direct work with lecturers and other students or exam preparation was however not built into the credit point system [cf. the so-called ‘Carnegie Unit’ in the USA Gerhard (1955: 647ff.), Burn (1974: 115ff.), Hefferman (1973: 61ff.)]. Ultimately, nobody cared how much time students needed to finish their obligatory course work for these lectures. A brilliant term paper that a student had written in 40 h was worth more than a shabby draft that had taken a student 200 h to produce. This old-fashioned system is somewhat reminiscent of the forms of calculation which are usual in the market economy. Customers give little thought to whether it took a total of 25 or 70 h to produce a kettle; their buying behaviour is merely influenced by the price and the quality of the product. If a supplier can successfully produce a high-quality kettle for an affordable price in 25 h instead of 70, then so much the better.

Current students may not be aware of it, but those who studied in the seventies may have noticed that calculating performance in hours using ECTS points is a revival of an old economic idea: the Labour Theory of Value. According to this idea, proposed by Karl Marx and the national economist David Ricardo before him, the value of an item is not defined by the price it could reach on the market, but solely by the hours it takes to manufacture it. In accordance with Karl Marx, the idea behind ECTS could be articulated as follows: the value of an item—here a student’s performance—is determined by “the amount of work necessary for its production”. This means that the “value of work”—for Marx the wage, for ECTS the point for accomplished study hours—“can likewise be determined by the quantity of labour required for its preparation” (Marx 1953: 487).

The economists transformed Marx’s Labour Theory of Value, which was predominantly analytical, into a practical economic control mechanism. They were aware that it was not possible to predict exactly how much time every single person needs for the manufacture of each product and service. Just like them, the originators of the European Credit Transfer and Accumulation System realise that it can only be estimated how much time every student will need for readings, follow-up work from a lecture or writing a term paper. Just as the Marxist economists based their time requirement calculations on an ‘average worker’, those applying the credit systems start with the workload of an ‘average student’. Thus the basis of calculation in the Labour Theory of Value is always exclusively the average working time.

Those who developed the Labour Theory of Value as an instrument of control within and between organisations were of course aware that the envisaged average working time results in varying levels of performance. In the socialist planned economy, people who produced high quality work in the average working time were only rewarded with praise for ‘over-fulfilment’ or, in the best cases, with distinctions such as ‘hero of work’, the ‘Karl Liebknecht Medal’ or a ‘badge of honour’. From the old system of evaluating and motivating workers, ECTS has adopted the concept of marks in order to grade how well or how badly the average working time has been used by a student (Cf. Karran 2004; Grosgees and Barchiesi 2007).

Marxist economists have prevailed in only a few areas of the economic system. It is assumed in the planned economy of the socialist state—with reference to the Marxist Labour Theory of Value—that the value of the working hour of a hill farmer, a road construction engineer and a policeman is the same and should consequently be remunerated equally. In local exchange circles, the prices for such goods as different as a massage, a home-fired teapot and a consultation on a start-up business are not set according to supply and demand, but according to the amount of time necessary for their manufacture. According to a way of thinking shaped by the market economy, the Labour Theory of Values has not come out on top. It would cause irritation—with all the superficial plausibility of the theory—if a hairdresser demanded the same hourly wage as a supermodel or a university professor just for working the same amount of hours. ECTS points are an example of the revival of a theory which has been declared dead by many economists and failed to catch on as a basis to control complex economic processes—at least until now. Nevertheless, it can be used quite well to steer internal processes in organisations or to control exchange processes between organisations outside of the market economy.

2.1.3 In Which Units are Achievements Acquired and Exchanged? On the Meaning of the Modules

Artificial currencies can be divided up in various ways. Certainly the normal method is being able to acquire, accumulate, save and exchange artificial currencies in an arbitrary unit of the decimal system. For example, Airmiles, Boots points or Smileys are acquired in various units of the decimal system, but they can be arbitrarily added to each other for the preparation of the exchange. In this way they do not vary from a monetary currency in which it is generally accepted that all Euro coins and notes can be arbitrarily combined with each other independently of the scale in which they had originally been acquired or saved (cf. however Zelizer 1994: 26ff., for ‘multiple monies’).

However, it can also be decided that an artificial currency only receives a value when collected in previously-defined modules. For example, the condition can be set that a collector only receives a prize once they have collected ten tokens from Coco Pops and ten tokens from Frosties and have stuck them in a collector’s album. Theoretically, the allocation of Airmiles premiums can be linked with a precisely-defined number of miles flown, for the use of a credit card or for hiring a rental car. The artificial currency ECTS was also designed in this peculiar way. Students cannot collect individual ECTS points by proving that they have spent 30 h doing something university-related. According to the logic inherent to ECTS,

credit points can only be acquired within the framework of prescribed lectures and exams which have been consolidated in precisely-defined modules and can be monitored at the end.

Certainly this type of accumulation of accomplishments existed even before Bologna. The attendance of two consecutive lectures, finishing a tutorial and writing a term paper could be certified without any fuss. If a student did not perform one of these tasks, a lecturer could deny them their signature. A single session only had exchange value when the other required sessions and exams were officially approved, and this would make the student eligible to take the final exam. This compulsory approval of various achievements seemed to make sense for didactic reasons. Teachers could discern which lectures fitted together, how much time students needed for the preparation and follow-up work of specific seminars and which types of exams were necessary to prove their knowledge. All of this was linked to an individual certificate that had to be signed and stamped by the professor each time a student had carried out the required work. Students would do what was didactically required to obtain these papers without being asked.

This system has been radicalised by the introduction of the artificial currency ECTS. The problem with ECTS is that the points cannot simply be allocated just for signing the attendance register at lectures, for sitting in a seminar, for proving that time was spent at a desk reading or for writing papers. After all, according to the post-Bologna logic, it's not primarily about proving a student's attendance, but rather proving what he or she has learnt, understood and applied. This means that—at least according to the Bologna masterminds—after measuring the students' time in ECTS points, an additional check is necessary to make sure it has led to the acquisition of knowledge. Students have to prove this with written, oral and multiple-choice exams and through presentations, progress reports and term papers. According to this idea, which now dominates at most universities, students have to prove that the time spent on their degree had an 'effect'. Only if the acquisition of knowledge has been certified by exams can ECTS points be awarded.

Understandably, it would be extremely complicated to test every single ECTS point for knowledge acquisition. The 180 credit points required in exchange for a Bachelor degree would have to be assessed in 180 individual tests during a three-year study period. Even controlling the knowledge acquisition of every tutorial, lecture or seminar counting for 2, 3 or 4 credit points would lead to 30–50 single tests in a Bachelor programme. This may have become the reality at some universities which have already applied all of the Bologna reforms, but most higher education institutions would not see this as a feasible prospect due to the weight of marking that the teaching staff would face.

Because all study activities have to be calculated in ECTS points and because it is obligatory to pass an exam each and every time in order to prove that knowledge has been acquired, it has become inevitable that very complex modules are

introduced. These modules have to function as containers for thematically similar lectures, seminars and tutorials, whose content can be assessed in one single exam. The accreditation rules for these modules have become rather detailed. Learning contents and qualification goals have to be described, as well as the teaching methods to be used. The prerequisites for student participation and for the allocation of credit points have to be decided, as well as the possible professional applications. Furthermore, the module framework must state in precise detail which lectures, seminars and tutorials have to be attended, which exams are to be taken, which essays and term papers are to be written and how much time the students are supposed to spend on the preparation and follow-up work of various sessions. We see that the value of the artificial currency ECTS only shows itself when the workload is cast into modules.

Even if ECTS points have paved the way for the introduction of modules in a host of European countries, it must not be overlooked that modularisation is hiding a particular pedagogical concept which has been propagated for a while. As early as in reform debates after World War II, the demand was repeatedly made to combine different types of teaching and learning in thematically-oriented modules. While for many countries in the post-war period the modular concept was merely a scenario to be tried out once at the most in pilot projects at reform universities, the introduction of the artificial currency ECTS has given the concept of modularisation the decisive impetus to spread Europe-wide.

2.2 On the Management of an Artificial Currency: The Role of Accreditation, Quality Assurance and Evaluation

Looking at the newly-introduced educational currency system from an outsider's perspective, ECTS points are numbers filed in lists in Excel documents in faculty databases combined with the names of students. But the mere fact that an ECTS point is linked to a student's name does not automatically imply that this point can also be accumulated, saved, transferred and finally exchanged for a degree.

When analysing an artificial currency, it is now interesting to note how the objectification and safeguarding of this number takes place. This process is identified in research on the social construction of numbers in terms like 'enactment' (Radcliffe 1999), 'upkeying' (Vollmer 2006) or 'micro-production of macro-order' (Pentland 1993). Eventually various procedures must secure and protect the artificial currency so that ECTS points are as indisputable in their comparison, allocation and exchange for a degree certificate as the timing of a hundred metre race, the dollars needed to hire a car or the kilograms and pounds of weight gain and loss in a diet (for various examples of the safeguarding of numbers, see Bloor 1994; Booyesen 2002). Within the framework of the Bologna Process, a number of institutions have been created in an attempt to guarantee this safeguarding.

2.2.1 The Monetary Watchdogs: The Role of Ministries, Accreditation Agencies and Universities

As with every currency, people must be prevented from defining the exchange rate themselves. The risk is not so much that students will manufacture their own ECTS points, but rather that discounters of ECTS points will put their own version on the market. It would be easy for an institution to hand out credit points to students in exchange for adequate monetary compensation, without the need for students to put themselves to any undue mental effort.

Various institutions can take over the role of education currency watchdog. The oldest-known procedure is for every country to authorise every degree programme so that students can automatically attain credits in degree programmes which have a national seal of approval. Another possibility created in the wake of the establishment of a European Higher Education Area is to outsource the quality assurance of degree programmes to semi-public or even private accreditation agencies. In this case, ECTS points can only be exchanged between universities and redeemed for a degree if they were gained within an officially-accredited programme. The third possibility is allowing universities to authorise degree programmes, trusting that the public ones won't be the first to abuse this autonomy of self-evaluation.

These forms of legitimisation of student performance were in existence before Bologna, and even then it had to be ensured that degrees would be accepted beyond the realms of the university campus. The introduction of this artificial currency has however brought some new features with it: each ECTS point must be checked to see if it can be acquired in the pre-defined time, how it fits together with the acquisition of other credit points and in what form these points can be tested. Even though ministries, accreditation agencies and universities rarely carry out testing at the level of individual points, credits must still appear to be in line with official requirements, whether that be through national certification, official accreditation or internal rubber-stamping by the university. If this were not the case, there would be no reason for other universities to accept ECTS points.

2.2.2 The Currency Police: Quality Management for the Prevention of Currency Inflation and Deflation

The approval of a degree programme by education ministries, accreditation agencies or universities alone is not sufficient. It just ensures that the planning of a degree programme and the calculation of the students' working hours are in accordance with the Bologna criteria. Independent control mechanisms at universities are necessary to ensure that the currency remains strong even if, for example, the teachers' exaggerated expectations increase the workload

disproportionately, or if it is not possible to guarantee the numbers of exams necessary to achieve ECTS points.

The establishment of an artificial currency is therefore intertwined with a discussion about mechanisms of ‘quality management’ at universities. These discussions had already started before the Bologna reforms. At first there were often only theoretical deliberations as to how the universities could be certified according to the internationally-recognised family of quality standards ISO 9000, what ‘total quality management’ at universities could look like, and in what form the so-called benchmarking comparisons between institutions could contribute to an improvement in the quality of teaching. However, discussions on quality gained a completely new dynamic with the Bologna reforms. Education ministers emphatically stressed “that the quality of university education is the lynchpin for the creation of the European Higher Education Area” and that every single university must comply with appropriate measures to guarantee this quality (Berlin Communiqué 2003: 3).

When university-wide quality management systems were established, vice-chancellors for quality assurance and specialised departments for quality development were soon confronted with the same old problems. It is with difficulty that the university’s core process of imparting knowledge through seminars, lectures and tutorials can be acquired, using the tools for quality assurance in companies. It is difficult to measure students’ ‘*quality of results*’, because it requires a judgment about their ability to reflect, criticise or acquire knowledge (cf. Pasternack 2000: 41). But it is also difficult to evaluate the ‘*quality of the process*’—in other words the quality of lectures—because a student’s satisfaction or dissatisfaction with a teaching session often divulges nothing about its quality. Even the regular awarding of such ‘happiness points’ reveals nothing about whether the students have really learnt something. After all, the ‘*quality of structure*’, or the way in which teaching sessions take place, is nearly impossible to determine because even teachers argue about whether the use of PowerPoint slides in lectures nowadays can be considered as a sign of the teachers’ abilities in using the newest pedagogical methods or if it is just a manifestation of his or her incompetence at public speaking.

For these reasons, quality management at universities can only guarantee that any form of evaluation does take place and in doing so only concentrates on the application of formal standards. Consequently, European Union-funded guidelines are full of assertions that quality management must be ensured throughout the university; that the workload for each ECTS point is realistic; that the necessary time expenditure for students is regularly checked and that the learning aims and methods must be adjusted for any credit point discrepancies. It is now seen as ‘good practice’ that every module is described with ‘appropriate learning aims’ and that for every component of a module, clear information about the allotted credit points is available (European Communities 2009: 18 and 26). Admittedly, this procedure does not guarantee that students learn something throughout the three years of studying, but it can give the convincing outward appearance that

ECTS points are an efficient means of measurement and can be combined within and between degree programmes.

2.2.3 IT Systems for the Saving, Accumulation and Exchange of Achievement Points

A further problem concerns the guarantee that ECTS points can be reliably attributed to students. At first glance, the most efficient method for the collection and exchange of ECTS points would be handing over students' credit points in the form of coins and notes. For every tutorial, exam or lecture, a student would receive a coin worth 1, 2 or 3 achievement points from the teacher. For larger work packages such as internships, seminars or term papers, the student would receive a grade worth 4, 5 or 6 achievement points. When the student had coins and notes worth 180 or 120 achievement points, he would simply exchange these at the examination office for a Bachelor or Master's degree.

Naturally this procedure wouldn't work because achievement points cannot be arbitrarily combined. This means that extra information would have to be annotated on every coin and note; for example, the achievement for which a coin or note was gained, the person who awarded the point and the possible expiration date of the point. Only when each of these 180 or 120 achievement points (the cohesion of which is precisely determined in advance) have been acquired, can they be exchanged for a specific Bachelor or Master's degree in, say, Political Science, Mathematics or Nursing.

Before Bologna, everything could still be done manually. A student sought confirmation of his or her achievements in a lecture or seminar by obtaining the lecturer's seal of approval. The necessary contextual information, such as the student's name, the title and type of the lecture, the form of service provision and the date were then simply noted down on a sheet of paper and certified with a signature. Students collected these individual certificates in their progress records. When the students had collected the necessary seven, eight or twelve certificates for a diploma, they took them to the examination office and, in combination with their final exam, received in return their graduation certificate.

But such a low-tech system can no longer be used when 120, 180 or 240 achievement points have to be taken into consideration; additional information regarding the modules they are valid for and the complex restrictions on combining points requires something a bit more advanced. For this reason, the at best rudimentary IT systems available at universities for the administration of exams and lectures have been expanded considerably since the introduction of the artificial currency ECTS. Nowadays no university seems to be able to get by without complex module planning programmes, electronic course handbooks or campus management systems. The collection of individual certificates in a progress record

at home has been replaced by a system in which every achievement is only apparent when it is filed away in a course database.

2.2.4 What can be Done with an Artificial Currency? ‘Load’ it with Additional Features

Artificial currencies are not static accounting units; rather, they can change according to the currency watchdogs’ decisions or during the course of their practical application. The frequent flyer programmes, for example, were originally relatively simple exchange systems in which points collected for flights could be swapped for further free flights. Gradually additional features were added to these frequent flyer programmes so that bonus points could also be acquired directly through monetary payments, transferred to other people and exchanged for a multitude of products and services.

It is also interesting to note how the artificial currency ECTS has been loaded with more and more features over several decades, including the saving, collection, transferral and exchange of points. Originally, in the late eighties, ECTS was merely created for students who had spent one or two semesters at a foreign partner university in order to allow them to compare their achievements at both institutions. Since ECTS points have been introduced, a returning student does not just bring home the information that they attended two seminars, took an oral exam and wrote a term paper, but also the guest university’s assessment as to how much time has been expended in doing so. Achievements have become more easily transferable. Hence the original term: *European Credit Transfer System*.

Only in the years after the Bologna Declaration did it become apparent that ECTS is not only supposed to be a transfer system for a student’s individual achievements, but also that it can also be used to calculate and validate all the activities required for his or her degree. By mapping all expected achievements in the form of this time currency, it has become possible for all students—not just those who have studied at several institutions—to exchange their points for a final product, namely a Bachelor or Master’s degree.

In order to be able to exchange ECTS points for a degree, the prerequisite is that they can also be *collected*. Within the framework of the Bologna Process, therefore, many universities have introduced the possibility for students to collect their points in small electronic lockers located within the examination offices. Increasingly the transfer system has evolved into an *accumulation* system, which is why the change of name from ECTS—‘European Credit Transfer System’ to EUROCATS—‘European Credit Accumulation and Transfer System’ was demanded by some at an early stage.

Originally, ECTS points could only be collected within the context of the student’s intended degree certificate. Just as in an Airmiles programme, it was assumed that points expire if they are not used up in a certain period of time. Only when the concept of ‘life-long learning’ arose during the Bologna reform’s

evolutionary process, a method of *saving* the points over a longer period of time had to be found, in order to make it possible for them to be used later as a constituent part of a qualification.

In this way the artificial currency gradually took shape, assuming functions such as transfer, collection, saving and exchange. From a planning point of view, the artificial currency ECTS has suddenly become highly appealing because many processes that previously took place in the darkness of seminar, lecture and study rooms now seem, at least in regard to their time expenditure, assessable, controllable and predictable. This has however led to a previously unknown complexity increase in the conception and implementation of degree programmes at universities, and this can best be captured using the term ‘the Sudoku effect’.



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