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ABSTRACT

A study examined distance education systems and practices in the major areas of the world (Australia, Asia, Africa, South and Central America, North America, and Eastern and Western Europe). A long version of the survey instrument was originally mailed to 1,640 institutions, organizations, and government agencies, and a short version was mailed to 741. An overall response rate of 21.4 percent was obtained (with response rates ranging from 3.3 percent for Eastern Europe to 40.0 percent for Australia). The study yielded data on the general characteristics of the distance education institutions and their budgets. As expected, widening educational services to include new groups of adult learners was cited as the most important goal of the institutions studied. A great number of educational media were being used and surprisingly large sums are allegedly being invested in media development. There was great interest in developing and maintaining student independence, as well as in learner friendliness (using personal counseling and tutorial services to enhance students' success). (Appendixes include short and long versions of the questionnaire, information on the survey respondents by country, and a list of institutions in the study sample.) (MN)

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FernUniversität
The Distance Teaching University
of the Federal Republic of Germany

Z I F F
Zentrales Institut für Fernstudienforschung
The Institute for Research into Distance Education

**International Study on Distance
Education:
A Project Report**

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Hagen: November 1988

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List of institutions in the sample

1. Aims/purpose of the study

(F. Doerfert, K. Graff, B. Holmberg, R. Schuemer & M. Weingartz)

The aims are:

- to collect information about distance-education institutions
- to define variables suitable for describing them
- to analyse the relationships between these variables

and

- to classify institutions in groups or clusters according to their similarity, if possible.

Situation at the beginning of the project

The lack of systematic documentation of distance-education institutions was the starting point of the study. The situation at the beginning of the project may be characterised as confusing:

Many very different organisations and institutions are engaged in activities in something that may be referred to as distance education - e.g.:

- universities: specially designed for distance education like the 'Open University' (UK) or distance education departments of conventional universities
- correspondence schools
- radio and TV companies
- private enterprises and organisations
- governmental bodies

and so on.

Some of these institutions are well known and there is a lot of information about them available. There are others about which we did not know whether they were engaged in distance education at all.

The project has been planned to be carried out in three steps, the first two of which were to be carried out by means of a written questionnaire:

- Step 1: an investigation of
 - study organisation
 - teaching
 - media applied
 - student services, tutoring and counselling
 - assessment of learners' performance

1. Aims/purpose of the study/ "2"

The questions in step 1 were fairly general; the purpose was to get a first overview. Results of this step are described in: Bückmann et al 1985; Doerfert 1984; Graff & Holmberg 1985; Holmberg 1985; Holmberg & Schuemer 1985; Neuhoff & Riechel 1985.

- Step 2: replication of step 1; contacts with selected institutions to obtain more detailed information and further explanations
- Step 3: a study of some frame or contextual factors such as industrialisation or national educational system

Finally we hope to be able to develop some recommendations to design distance-education institutions on the basis of our findings.

Some results of the first step

Results of the first step of the project are described in the reports cited above. These reports contain the details. Holmberg (1985) gives a short summary. Here only some examples of the findings:

One of the objectives of step 1 was to define some variables for describing or categorizing the institutions more globally; these variables are 'composite scores' constructed by combining certain items in the questionnaire. Such scores are:

- a) Degree of supplementary face-to-face contacts and teaching: the institutions differ in the amount of supplementary teaching; only 17 % make no use of any supplementary teaching; 49 % offer some form of optional face-to-face sessions; 25 % include compulsory face-to-face sessions and 9 % regard such sessions as one of the main components of their teaching.
- b) Flexibility: The institutions differ in the degree of freedom or flexibility they give the students with regard to
 - pacing their study
 - submitting their assignments whenever it suits them
 - choosing between different media
- c) Support vs. expectation of student independence: Some institutions expect and base their work on the assumed prevalence of students' capacity to work independently, whereas others start from the principle that students need help and support to be able to learn independently. An example of an institution expecting students to be independent is the FernUniversitaet; an example of a more supporting institution is the Open University.
- d) Learner friendliness or degree of support for learners: The concept is based on M. Delling's term of the distance-education institution as a 'supporting organization' and means the degree to which the institution gives support to the learners by means of tutoring and counselling and to which it is adaptive to students needs and wishes. Examples of items for this composite score are:

1. Aims/purpose of the study/ "3"

- contact with students who have not been heard from
 - individualised comments on the assignments of the learners
 - short turn-around time for assignments.
- 'Friendly' institutions tend to be more successful: their 'non-starter' rates and 'drop out' rates are lower.

Step 2 of the study: the present stage

Based upon the results of step 1 the questionnaire was revised; some questions were reworded, others omitted etc.

Parallel to the statistical analysis a documentation has been prepared (Doerfert & Schuemer et al 1988) containing a description of each of the institutions answering the questionnaire.

This description summarises the answers to the following questions/topics:

- ownership and type of institution
- number of courses
- subject areas of courses and educational level
- number of learners currently enrolled
- relative importance of face-to-face contacts
- flexibility in pacing and teaching methods/options for students
- media used for teaching
- local study centres and their functions
- evaluation of courses and media
- elements of two-way communication
- media used in two-way communication/counselling and tutoring service
- measures to reduce the non-starter and drop-out rates
- type of continuous assessment
- types of items for the assignments
- average turn-around time for tutor's correction and comments of the assignments
- termination of courses with examinations and type of examination
- success rate and non-starter rate.

2. Method

2.1 Preliminary remark

(*R. Schuemer*)

The approach of the study is nomographic to some degree; it is assumed that there are some general characteristics or 'traits' which can be applied to all the different institutions; the research team tried to express the questions and the reply categories in so general a manner that they are applicable to as many distance-education (DE) institutions as possible. But the DE-institutions are very different with respect to

- cultural background
 - educational systems/traditions/contexts
 - structure and organisation (e.g. dual vs. single mode)
 - level of training
- etc.

The same element may have different meanings or functions in different contexts or systems. Therefore it is difficult to find questions and categories equally relevant to all institutions. In spite of these limitations of the approach the method seems to be justified as a means to acquire basic information for want of systematic data on a great number of institutions. Further studies aiming at a more precise description of single institutions may use an ideographic approach to get a better fit between description and reality.

2.2 The questionnaire(s)

(*R. Doerfert, K. Graff, B. Holmberg, R. Schuemer & M. Weingartz*)

The survey was done by means of a written questionnaire. Two versions of a (to a large degree standardised) questionnaire were used: a longer version with 79 and a shorter version with 54 questions; the majority of the questions have several parts. (The additional use of a shorter version seemed to be necessary in order to raise the response rate - for the latter see section 2.4; the longer version contains all the questions of the shorter one with nearly the same wording and in addition some other questions referring foremost to the budget of the institutions.)

Each version of the questionnaire has been worded in four languages: English, French, German and Spanish.

The questionnaire is - even in the shorter version - very extensive and, therefore demands great efforts of those responding.

The letter accompanying the questionnaire contains some information about the objectives of the survey.

The front/title page of the shorter version was designed in the manner of TDM ('total design method' - cf. Dillman 1987): it contains the symbol of the FernUniversität and the topic/theme of the survey in big type size - see Appendix 1.

The questions refer to the following general topics:

- ownership of institutions and sources of financial means
- distribution of personnel over the departments/ delegation of

2. Method/"5"

- staff to different tasks
- educational levels and subject areas of courses
- number of learners
- media used for teaching
- regional study centres and their functions
- face-to-face components and their importance
- two-way communication, counselling and tutoring
- assessment of learner performance
- success rates, non-starter and drop out rates

The questions in detail (the numbers in the following list refer to the numbers of the questions in the questionnaire; numbers preceded by "L" refer to the long version, those preceded by "S" refer to the shorter version of the questionnaire):

- ownership and type of institution (L2, S2)
- aims of the institution (L3)
- annual budget in US \$ (L4)
- sources of financial means (L5)
- distribution of financial means over the departments of the institution (L6)
- personnel costs in relation to total costs (L7)
- distribution of personnel costs among departments (L8)
- services rendered by own institution and services rendered by other institutions (L9)
- open-ended question referring to the meaning of the terms 'programme', 'curriculum', 'course' (L10, S3)
- number of courses, programmes and curricula (L11, S4)
- educational level of courses offered (L12, S5):
 - I: basic school education
 - II: further education at school and basic professional training
 - III: university study and further professional training
 - IV: others
- subject areas covered by the courses offered (L13, S6)
- language used in study material (L13a, S6a)
- number of learners currently enrolled: total number (L14, S7) and number per subject area (L16, S7a)
- average time needed to acquire a degree or certificate (L15)
- minimum conditions to be complied with in order to study at the institution (e.g. minimum qualifications or payment of fees) (L17)
- number and type of degrees/diplomas offered (L18)
- number of research projects related to distance education (L19)
- restrictions as to the intake of students and the employment of staff (L20)
- number of staff members employed in the different departments of the institution (L21)
- importance of the computer for different tasks (L22)
- relative importance of face-to-face contacts (L24, S8)
- flexibility in pacing and teaching methods/options for students (L25, S9)
- cooperation with other institutions (L26) and its importance (L27); use of study material and other services offered by other institutions (L28) viz. services rendered to other institutions (L29)
- media used for teaching the different subject areas (L30, S10)
- prescription of media combinations (L31, S11)

2. Method/"6"

- share of different media in the media combinations (L32, S12)
- course teams and their participants (L34/35, S13/14)
- media specialists for course development: members of staff or outside personnel (L36, S15)
- local study centres and media used there (L37, K16)
- functions of the local study centres: face-to-face teaching compulsory for students vs. support of distance learning (voluntary participation) (L39, S17)
- evaluation of courses and media (L40, S18)
- research into the conditions and methods of distance education (L41)
- guidelines for selection of teaching media (L42, S19)
- estimate of the expenditure for media - relative to the total budget (L43, S20)
- number of staff members mainly working on media development (L44, S21)
- flexibility of curricula (L45, S22)
- opportunities for learners to design their study programmes tailored to their individual needs / use of learning contracts (L46, S23)
- main aims of distance teaching at the institution / aims of self-checking exercises and examinations (L47-49, S24-26)
- encouragement of study groups or learners' self-help groups (L50, S27)
- responsibility for the assessment of learner performance (L51, S28)
- elements of two-way communication (L52, S29)
- counselling and tutoring service /media used in two-way communication (L53, S30)
- times for contacting the counselling services / also after usual office hours (L54, S31)
- percent of learners using the counselling services (L55, S32)
- encouragement of learners to contact their tutors when they feel they need help (L56, S33)
- measures to reduce non-starter and drop-out rates (L57/58, S34/35)
- if a learner is enrolled for several courses: is he assigned one central tutor for all courses or are there different tutors ? (L59, S36)
- reference to one central counsellor or several counsellors for different problems areas ? (L60, S37)
- types of continuous assessment (L61, S38)
- main purpose of the assignments: assessment of learner performance vs. learner support (L62, S39)
- termination of courses with examinations / type and function of terminating exams (L63/64, S40/41)
- relative number of course units including/prescribing assignments (L65, S42)
- submission of assignments whenever it suits the learner (L66, S43)
- average time lag (in weeks) between two assignments in a course (L67)
- average turn-around time for tutor's correction and comments of the assignments (L68, S44)
- types of items for the assignments (L69, S45)
- commenting on assignments and extent/amount/quantity of commenting (L70/71, S46/47)
- individualisation of tutor comments (L72, S48)

2. Method/"7"

- responsibility of correctors of assignments for other tasks (e.g. answering student's questions or counselling) (L73, S49)
- manner of payment of correctors/tutors (L74, S50)
- use of computers for correction and commenting of/on assignments (L75, S51)
- success rate and non-starter rate for the different subject areas or groups of subject areas (L76, L79, S52)
- success rate and non-starter rate for the three courses with the highest number of enrolments (L77/78, S53/54)

2.3 Dispatch

(*F. Doerfert, R. Schuemer, C. See-Bögehold & C. Tomaschewski*)

The dispatch was done in three steps:

- 1) first dispatch of the long version of the questionnaire in August/September 1986
- 2) second dispatch of the long version of the questionnaire together with a reminder in February/March 1987
- 1) first dispatch of the short version of the questionnaire in August/September 1987

In step 1) the questionnaire was sent to 1640 addresses; some of these addresses were not those of distance education institutions but of other bodies or individuals; it was hoped that these institutions (inclusive of ministries of education) and interested persons would function as multipliers for the distribution of the questionnaires or would have some useful contacts in their countries.

92 of the 1640 addresses could not be delivered. 626 belonged to institutions which are no longer or not yet engaged in distance education or are research rather than teaching institutions. 922 addresses of institutions remained. These were the data base of addresses for the dispatch in step 2) and 3). The addresses of the institutions that returned a completed questionnaire in step 1 were eliminated from the data base for step 2) and 3). (The regional distribution of addresses for the dispatch is summarised in Table 1; for information on the response rates in the different regions see Table 3 under section 3.1 .)

In countries for which we did not have a version of the questionnaire in the national language the most similar language version or a version in the most probable second language, respectively, was used, for example:

- Eastern Europe: English and German (exception: Romania, where a French version was used additionally)
- Portugal: Spanish and English
- The Netherlands and Scandinavia: English and German.

(Which language(s) was (were) used for each country can be seen in Table A_1 in Appendix 3 to section 3.1)

2. Method/"8"

Table 1: Regional Distribution of the addresses for the first dispatch of the long version (step 1) and of the short version (step 3)

Region	long version frequency	short version frequency
Australia	72	40
Asia	191	109
Africa	93	49
South America (incl. Central America and the Caribbeans)	180	85
North America	328	154
Western Europe (incl. Scandinavia)	651	210
Eastern Europe (socialist states)	125	94
Sum	1.640	741

2.4 On the state of the data/ some problems and possible errors

(R. Schuemer & C. Tomaschewski)

The results presented under 3 may contain some errors. Some reasons for these are:

- the questionnaire is standardised to a great degree, but it contains some open-ended questions; independent coding of the answers to these questions showed low inter-rater concordance; Therefore the frequencies for the answers to the open-ended questions are not reported here.
The coding of the answers to the other questions is also susceptible to error, however. There are various reasons for this:
 - Not all questions and categories for the answers seem to be clear; on the contrary, some respondents' comments point to misunderstandings caused by some of the wordings in the questionnaire.
 - Several of the institutions are dual-mode institutions. It is not evident in some cases whether the answer to a question refers to the institution as a whole or to the distance-education department of the institution.
 - The answers to related questions are contradictory in some cases; answers to questions at the beginning of the questionnaire conflict with later answers (e.g. different subject areas are mentioned in answers to different, but related questions).

2. Method/"9"

- In some cases comments on categories ticked off conflict with the chosen category.
- Some respondents seem to have changed their 'strategy' of answering during the process of filling in the questionnaire - probably a result of the too voluminous questionnaire and its complexity.

Some of these ambiguities could be cleared up by considering the context and other information material (e.g reports on/from the institution, study guides etc.); but such additional information was not available in all cases.

- Further coding problems stem from the attempt to transfer related terms from one educational system to another and in addition by translating from one language into another (it may be preferable to use only one language version¹⁾ in such projects since the questions and answers might be more comparable - even if this may produce lower response rates in countries with a different language).
- Another problem may result from combining data from the long and the shorter version of the questionnaire. Since the common questions in both versions have nearly identical wordings and their logical structure is the same in both versions, this may be a minor problem - see section 2.5 for the details about the combining of the two versions.

2.5 The transformation of the data from the long version into the data format of the shorter version

(F. Doerfert, R. Schuemer & C. Tomaschewski)

Answers to questions with different numbers in both versions but identical content and wording were transferred directly into the common datafile.

The categories for subject areas in the long version are more differentiated than those for some questions in the shorter version. In this case it was necessary to combine some categories of the long version to yield data comparable with those for the corresponding questions in the shorter version. This was done by combining categories '(1) Education..., (2) Humanities, music and the arts and (3) Languages...' from the long version and by subsuming them under category '(1) Education, the humanities, music and the arts, languages' of the shorter version, just as long-version categories '(4) Law... and (10) Social sciences...' were transformed into the short-version category '(2) Social sciences and law' and the long-versions categories '(7) Engineering and technical professions, (8) Sciences ..., (9) Mathematics' into the short-version category '(5) Mathematics, sciences and engineering'; data referring to the long-version categories '(5) Economics...' or '(6) Agriculture...' or '(10) Medicine...' were assigned to the corresponding short-version categories (3) or (4) or (6), respectively.

Different mathematical operations were used for different questions in this process of combining categories of the long version:

1) in a widely used language such as English

2. Method/"10"

- The numbers of learners per subject area (L16 long version) were summed up over the corresponding categories to produce the figures in short-version format (S7a).
- Percentages (relative frequencies - e.g. the success rates in L79) were combined simply by averaging. (As the percentages may be based on different absolute frequencies the averaging is - strictly speaking - inappropriate; in spite of this averaging seems to be justifiable here because the percentages are close to one another).
- For questions asking the respondent to tick off categories (e.g. L13: subject areas for different educational levels) the categories were combined by logical 'OR': If one or more of the long-version categories (subject areas) to be combined were ticked off then the corresponding category of the short version was defined to have been ticked off²⁾.

2) The transformation of data of the long version into the format of the short version has been done by means of an SAS-program (essentially 'if'- and 'assignment statements')

3. R e s u l t s

3.0 Overview/Prenote

The following representation of the results is descriptive and has mainly a summarising function. In this context we refrain from interpretation.

Section 3.1 contains some data on the response rate.

Section 3.2 describes some general characteristics of the institutions (type, size, educational level, etc.) and contains some information on their budget (sources of budget and its use).

Section 3.3 deals with teaching/learning methods.

Section 3.4 describes the results for teaching media.

Section 3.5 is concerned with two-way communication (tutoring, counselling and assessment of learners' performance).

3.1 Response rate/"12"

3.1 Response rate and regional distribution

(F. Doerfert, R. Schuemer & C. Tomaschewski)

The main problem in international surveys directed to institutions (and not to individuals) is the low response rate. There are several reasons for this - for example:

- postal problems (e.g. in developing countries)
- bureaucratic or political problems (e.g. in most of the Eastern European countries)
- the complexity of the topics/subjects of the investigation
- the great variety of institutions which makes it difficult to express the questions in such a way that they seem relevant to all the respondents

Therefore, one cannot expect a high overall response rate.

There was a total of 922 addresses of distance education institutions after eliminating

- those institutions which are not (or no longer) engaged in distance education or
- those addresses which are not correct (postal delivery not possible - see section 2.3 above).

215 filled-in questionnaires were returned; 18 of these questionnaires were disregarded because of uncompleteness (a great number of questions not answered). So the sample contains 197 institutions. 122 of these institutions answered the long version and 75 answered the short version of the questionnaire.

The total number of responses for different regions are summarised in Table 2 (The corresponding data for each country are presented in Table A_1 in Appendix 3).

(a) dispatch		(b) number of responses	
	(a)	(b)	
Africa	65	14	Latin America (incl. the Caribbean) .126....39
Asia.....	119	17	Western Europe (incl. Scandinavia)...269....53
Australia.....	50	20	Eastern Europe (socialist countries)..92.....3
Northern America (USA + Canada)...	201	51	
Total: (a) 922		and (b) 197	

3.1 Response rate/"13"

The resulting response rates are shown in Table 3:

- overall:.....	21.4 %
- Africa:	21.5 %
- North America:.....	25.4 %
- South America:.....	31.0 %
- Western Europe:.....	19.7 %
- Eastern Europe:.....	3.3 %
- Asia:.....	14.3 %
- Australia:.....	40.0 %

This overall response rate of 21 % is higher than that of the preceding step 1 of this study where a response rate of 14.3 % was yielded (see section 3.4 in Holmberg & Graff (eds.) 1985); but the representativity of the results is very doubtful.

Therefore, any generalisation with regard to the 'population' of all distance education institutions must be regarded with some reservations - strictly speaking, the frequencies and relations described in this report are valid only for the sample.

A second fact beside the low response rate should cause any attempt at generalisation and interpretation to be cautious: this is the uneven distribution of the response rates over the countries or regions (see Table 2 above: The highest response rate is for Australia, followed by South America; the lowest response rates concern the socialist countries in Eastern Europe¹⁾). It is obvious that, for example, the very low response rate of the Eastern European countries forbids any generalisation from the sample to the distance-education institutions in these countries.

Furthermore there are reasons to assume that state-owned institutions (e.g. in the U.S.A.) are over-represented and private institutions under-represented in the sample (see below).

1) There are also great differences between the countries within the continents; for example, the relatively high response rate for South America results mainly from the replies emanating from only two countries: Colombia and Argentina. See Table A_1 in Appendix 3 for the details.

3.2: General characteristics of the institutions/"14"

3.2 General characteristics of the institutions and their budgets

(R. Schuemer)

Questions in the short version are specified by 'Q' followed by the question number; questions in the long version are specified by 'L' and the number.

3.2.1 Age of institutions

The great majority (almost three quarters) of the institutions in the sample were after World War II (1. quartile \approx 1944; - see Table 4)

Table 4: Founding year of the institution
- range: from 1827 to 1987
- median:..... \approx 1967
- first quartile:.....1944
- third quartile:.....1975
N= 185; 12 x "no answer"

3.2.2 Ownership and aims of institutions

About one half of the institutions are state-owned (Q2; see Table 5).

Table 5: Ownership and type of institution (Q2):
- state-owned.....95
- official body under public law.....34
- private, commercial institution.....27
belonging to an association of some kind (trade union, church, etc.).....24
- other type of institution.....24
N=196; 1 x "no answer"

There are a few institutions with multiple responses; therefore the number of nominations (204) is greater than the number of respondents (N=196).

The long version of the questionnaire contains a question about the aims of the institutions (L3) and their importance. The respondents had to rate the aims on a 5-point scale ranging from "0": "no importance" to "4": "very much importance". Putting

3.2: General characteristics of the institutions/"15"

together the frequencies for the categories "3" ("much") and "4" ("very much importance") results in the order of aims shown in Table 6.

Table 6: Aims of the institutions and their importance (L3):	
f ₃₊₄ : frequency of answers "3: much" + "4: very much importance"	
	f ₃₊₄
- offer of further training opportunities (recurrent education):.....	81
- opening of school/university to new target groups:.....	72
- introduction of new teaching/learning media and technologies:.....	65
- introduction/application of new teaching/learning strategies:.....	64
- increase of available number of places for students:.....	59
- extension of the number of subjects on offer:.....	44
- reduction of costs in the educational sector:.....	44
- profit:.....	14
- others:.....	19

N=120; 2 x "no answer"

The comparatively high number of state-owned institutions (55 of 122 institutions responding to the long version of the questionnaire) may explain why 'profit' plays a minor role in the order of aims.

3.2.3 Educational level and subject areas of courses

It is very difficult to compare educational levels and school or university grades or degrees in countries with different educational systems and traditions. The research group tried to find wordings widely applicable to different educational systems (see Q5) - but it is obvious that the short descriptions used in the questionnaire suffer from vagueness to some degree. The categories are very rough and not unequivocal. Therefore the data should be interpreted with caution.

The interpretation of the data also has to take into account that one institution may offer courses for more than one educational level (many institutions gave multiple responses to Q5). Table 7 summarises the data for the total sample:

3.2: General characteristics of the institutions/"16"

Table 7: Educational level (Q5) of courses offered (Q5a):

	yes	no
basic school education (up to 15/16).....	53	143
further education at school and basic professional training (e.g. preparation for 'A' levels, high school certificate and entrance qualifications for university studies, upper secondary level, technical college etc.)..	101	95
university study and further professional training (after basic professional training and/or job experience)	152	43
others	35	159

The following question (Q6) gives some information as to the subject areas of courses offered. Table 8 summarises the data for courses of level III (university study and further professional training)

Table 8: Subject areas of courses - level III - (Q6):
frequencies of nominations

(1) education, the humanities, music and the arts, languages...	68
(2) social sciences and law.....	33
(3) economics.....	25
(4) agricultural sciences, agricultural and sylvicultural professions.....	11
(5) mathematics, sciences and engineering.....	28
(6) medicine and medical jobs and professions.....	11
(7) others:.....	12

The majority of institutions (152 from 197) offer courses for level III ("university study and further professional training") according to Q5), but only 82 of the 152 institutions ticked off one or more of the subject areas in Q6 for level III. Out of these 82 institutions only 43 offer courses in at least two subject areas on level III, and 30 offer courses in at least three subject areas (only 19 x four or more subject areas).

Taking into account all information available we tried to classify the institutions into the categories 'universities' and 'non-universities' ('university' here in the (Western) European meaning of the term): according to this provisional classification 72 of the institutions offering level III-courses can be classified as 'universities'.

Table 7 and Table 8 are based on the data for the total sample (N=197).

The groups of subject areas in Q6 are rather broad; it is possible to arrive at a more differentiated picture of subject areas covered by distance education by regarding the data for the 122 institutions responding to the longer version of the questionnaire (L12, L13 - see Table 9 and Table 10).

3.2: General characteristics of the institutions/"17"

Table 9: Educational levels (L12):

- basic school education:.....	40
- further education at school and basic professional training:.....	66
- university study and further professional training:.....	91
- other	22

N=122; 1 x "no answer"

Table 10: Subjects areas (L13) for level III (university study)

(subjects areas ordered by the frequency of mentions: f_{yes})

subject area	f_{yes}	N
(1) education, teacher training:.....	58	112
(5) economics:	57	113
(2) humanities, music and arts:.....	46	113
(10) social sciences:.....	46	113
(3) languages, linguistics:.....	42	113
(4) law and legal professions:.....	37	113
(7) engineering and technical professions:.....	31	113
(9) mathematics:.....	32	113
(8) sciences:.....	29	113
(11) medicine and medical jobs:.....	20	113
(6) agriculture, sylviculture, forestry:.....	15	113
(12) others:.....	22	113

The comparatively high number of nominations for "education" reflects the fact that several institutions are engaged in training and further education of teachers.

In view of the differences in educational levels between the institutions it is not surprising to find that there is a wide range of conditions learners have to fulfill in order to study (see Table 11). Beside 'payment of fee' (94 x) the condition mentioned most frequently is 'minimum qualifications' (66 x; N=119 respondents; 3 x "no answer" [question L17 in the long version of the questionnaire]).

3.2: General characteristics of the institutions/"18"

Table 11: Conditions to be complied with in order to study (L17):

	N	f _{yes}	%
N	number of answering institutions		
f _{yes}	number of institution mentioning the condition		
%	percentage related to 361 nominations in replies to this question (sum of f _{yes} over conditions)		
-- simply ordering course materials:	119	41	11.4
-- immatriculation:.....	119	56	15.5
-- payment of fees:.....	119	94	26.0
-- learning contract with the institution:.....	119	28	7.8
-- continuous assessment:.....	119	49	13.6
-- minimum qualifications (e.g. minimum age, entrance exam, job experience, minimum grade):.....	119	66	18.3
-- others:.....	119	27	7.5

3.2.4 Teaching modes (face-to-face vs distance teaching) and study centres

Institutions differ in the degree to which face-to-face components are part of the teaching method; furthermore in some of the institutions face-to-face components are voluntary while in others they are compulsory.

Table 12: Teaching mode/relative importance of face-to-face contacts (Q8):

a) pure distance teaching, no face-to-face contact.....	51
b) distance teaching with very little face-to-face contact (for tutoring/counselling purposes or immediately before oral examinations.....	53
c) distance teaching with a few face-to-face elements or supplements (e.g. seminars, week-end seminars etc.).....	86
d) distance teaching and face-to-face teaching of equal importance.....	28
e) face-to-face teaching with supplementary distance teaching material.....	25
f) others.....	5

(N=192; 5 x "no answer")

face-to-face sessions, if offered: voluntary..58/ compulsory..46/
partly, partly..29/ "no answer"..64

3.2: General characteristics of the institutions/"19"

26 institutions have given multiple responses (probably indicating that different methods are used for different courses, programs or curricula). The combinations and their frequency are:

- category a) and c): 3 x
 - category b) and c): 10 x
 - category b) and e): 2 x
 - category c) and d): 2 x
 - category d) and e): 3 x
 - more than two categories: 6 x
- (categories a) -- e):
see Table 12 above)

Putting together b) and c) in one category and disregarding the 16 institutions with multiple responses (others than b)+c)) yields the following distribution:

- 39 'pure distance teaching institutions' without face-to-face contacts
- 99 distance teaching institutions with a few face-to-face elements
- 14 institutions with distance teaching and face-to-face teaching of equal importance
- 14 institutions offering face-to-face teaching with supplementary distance teaching

The face-to-face components are compulsory at

- 26 of the 99 institutions with only a few face-to-face elements
- 4 of the 14 institutions with distance teaching and face-to-face teaching of equal importance
- 7 of the 14 institutions offering face-to-face teaching with supplementary distance teaching.

Face-to-face contacts take place frequently in regional study centres; about one half of the institutions have such study centres (see Table 13):

Table 13: Study centres and their function (Q16/17):

- study centres: yes/no

"yes":.....99

"no":.....94

"no answer":..4

- function of study centres:

- support of distance teaching (voluntary participation): 72
- compulsory face-to-face teaching:..... 54
- others:..... 26

There is a tendency that the study centres have rather the function to support distance study.

3.2: General characteristics of the institutions/"20"

3.2.5 Flexibility: Options for learners

The institutions differ in offering options to their learners with regard to pacing their studies and to media selection (see Table 14).

Table 14: Flexibility in pacing and teaching methods/options for students (Q9);

f : frequency of mentioning
N : number of respondents

Flexibility (in):	f	N
- when to start their course/their studies.....	105	182
- when to take their exams/final exams.....	92	182
- when to order their study material.....	92	182
- when to submit their assignments ¹⁾	96	182
- between different teaching methods.....	32	182
- between different media.....	4	181
- how and when to use counselling services.....	123	181
- others.....	19	182

One can define a flexibility-score (FI) for each institution by scoring each mention of a category as 1 (else 0) and summing up over the categories; the resulting score simply gives the number of options offered to learners by the institution.

- 30 institutions offer no options (FI=0); included: the 16 institutions with "no response" to Q9
- 23 institutions offer only one option in the sense of Q9 (FI=1) and 34 only two (FI=2)
- 27 institutions offer three options (FI=3) and 31 offer four (FI=4)
- 32 institutions offer five options (FI=5) and 20 offer more than five options (FI>5)

Many institutions are also flexible with regard to the curricula they offer (see Table 15):

Table 15: Flexibility in the curriculum to be followed for the acquisition of a particular diploma (Q22):

Flexibility:	
- low: fixed curriculum.....	84
- medium: fixed curriculum, but it contains alternatives...	92
- high: courses in the curriculum can be chosen freely within a set framework.....	39
- others:.....	2

N=183; 14 x "no answer"

1) Question 43 (similar to Q9) yields a somewhat higher rate of institutions allowing their learners to submit assignments whenever it suits them (see section 3.5).

3.2: General characteristics of the institutions/"21"

3.2.6 Size of institutions: number of learners and number of courses

The 'size' of an institution can be indicated by the number of learners, the number of staff members, and the number of courses, programmes, and curricula. It can also be expressed by its budget. In this section only the number of learners and the number of courses will be considered (see 3.2.7 for budget and staff).

The number of learners varies to a great extent (from 10 up to two millions)²⁾; about one quarter of the institutions has only 1,000 or less learners; about one half of the institutions has up to 3,000 learners; and only one quarter of the institutions has more than 10,700 learners (see Table 16).

Table 16: The number of learners (Q7)

range: from 10 to 2,000,000
first quartile \approx 1,000
median \approx 3,000
third quartile \approx 10,700

"no answer": 9 x

We tried to differentiate this overall number of learners with regard to the subject areas; Table 17 shows the median of the number of learners enrolled in each subject area. The interpretation of the data in Table 17 has to take into account that the majority of the institutions offer courses in only one or two subject areas; therefore the frequency of institutions responding with learner numbers greater than zero is rather small for each subject area. The medians in Table 17 refer to these institutions. The greatest number of learners - not regarding the residual category "(7) others" - can be found for "(1) education..." (Q7a: Median: near 1,000).

2) "2,000,000" is an estimated number for the audience of programmes produced by ORTS, a radio station with educational programmes in Dakar, Senegal. The next lowest number is 141,212. From other sources we know that, for example, the corresponding teaching Central Radio and Television University of China in 1988 has over 700,000 students registered for degree courses and that the Sukhotai Thammathirat Open University (STOU) in Thailand has more than half a million students.

3.2: General characteristics of the institutions/"22"

Table 17: Number of learners for each group of subject areas (Q7a):

N : number of institutions reporting number of learners greater than zero for a subject area

Med_o : median for those institutions reporting number of learners greater than zero.

f_o : number of institutions reporting a number of "0 learners" for a subject area

	Med _o	N	f _o
(1) education, the humanities, music and the arts, languages.....	1,000	101	79
(2) social sciences and law.....	558	65	114
(3) economics.....	567	61	118
(4) agricultural sciences, agricultural and sylvicultural professions.....	200	21	159
(5) mathematics, sciences and engineering.....	698	68	112
(6) medicine and medical jobs and professions.....	209	21	161
(7) others:.....	1,445	47	132

One gets a more detailed picture from the responses to the long version where the subject areas are more differentiated (see Table 18); but it has to be taken into account that the numbers of institutions responding for each subject area are even smaller.

3.2: General characteristics of the institutions/"23"

Table 18: Number of learners for the different subject areas (L16):

N_{>0}: number of institutions reporting numbers greater than zero
 Med_{>0}: median for those institutions reporting numbers greater than zero

	N _{>0}	Med _{>0}	Range
- (1) Education, teacher training:.....	42	798	10-20,000
- (2) Humanities, music and the arts:....	30	560	4 -8,122
- (3) Languages, linguistics:.....	36	318	5-21,313
- (4) Law and legal professions:.....	20	146	17-18,288
- (5) Economics:.....	39	558	54-60,000
- (6) Agriculture, forestry:.....	12	200	8 -7,000
- (7) Engineering and techn. profess.:...29		400	20-12,000
- (8) Sciences:.....	27	450	8-11,010
- (9) Mathematics:.....	26	600	12-15,404
- (10) Social sciences:.....	33	471	15-26,439
- (11) Medicine and medical jobs:.....	11	402	45-11,000
- (12) Others:.....	25	2,000	50-50,407

The number of courses, programmes and curricula can be regarded as another indicator of the size of an institution (see Table 19). It should be considered, however, that terms like 'course' or 'programme' may have different meanings in different institutions (although we tried to give a short definition of the terms in the questionnaire); in addition, courses may contain many course units in some institutions while they may comprise only a few units in others and the units may differ considerably with regard to their length.

3.2: General characteristics of the institutions/"24"

Table 19: The number of courses, programmes and curricula (Q4):	
- <u>number of courses</u>	range: from 0 to 4000; median \approx 49 courses (N=172; 25 x "no answer")
- <u>number of programmes:</u>	range: from 0 to 363; median \approx 2; (N=167; 30 x "no answer")
- <u>number of of curricula:</u>	range: from 0 to 600; median \approx 3; (N=167; 30 x "no answer")

The number of members of staff is another indicator for the size of institutions. Question 21 (L21) in the longer version of the questionnaire gives some information about this. The answers of the 106 institutions responding to the question vary to a great extent; the numbers for the members engaged in teaching vary from 0 to 2,000 (see section 3.2.8 and Table 26 below for the details).

3.2.7 Budget and sources of means

Only the longer version of the questionnaire contains some questions referring to the financial means and their distribution (L4-L8).

Table 20 shows some data on the annual budget.

Table 20: Estimated size of the annual budget in US \$ (L4)	
frequency (f) and percent (%) for the intervalls:	
	f %
- up to 500,000:.....	42 (37.5%)
- 500,000 - 1,000,000:....	15 (13.4%)
- 1,000,000 - 10,000,000: 32	(28.6%)
- 10,000,000 -50,000,000: 17	(15.2%)
- more than 50,000,000:... 6	(5.4%)

(N=112; 10 x "no answer")
Median: between 500,000 and 1 million.

The answers on question L4 give only a rough estimate of the annual budget in US \$. Regarding the data one has to take into account:

3.2: General characteristics of the institutions/"25"

- The rate of exchange of US \$ in relation to other currencies varies.
- Costs of living and personnel costs are hardly comparable in different countries.

Perhaps more expressive than the absolute quantities like those of Table 20 may be the figures about the relative importance of the sources of financial means (Table 21) or the distribution of expenses over the different departments or tasks within the institution (Table 22).

Table 21: Sources of the financial means at the disposal of the institution (L5):

N. number of respondents

f_x : frequency of institutions with the answer "x";
(e.g. $f_{\geq 80}$: frequency of institutions with answers "80% or higher")

Source	N	range	f_0	$f_{\geq 50}$	$f_{\geq 80}$
- learners' fees:.....	109	0-100%	28	48	32
- sales profits from teaching material, income from services to other institutions :.....	110	0- 80%	67	2	1
- interest from (foundation) income:.....	110	0- 10%	94	0	0
- subsidies /donations from private persons or bodies:..	111	0-100%	90	4	2
- subsidies from owner or umbrella organisation (with the exception of the state):	111	0-100%	91	6	1
- state subsidies:.....	111	0-100%	42	43	27
- others:.....	112	0-100%	87	3	2

Median for "learners' fee": between 33 and 35%;
median for 'state subsidies': 16 %;
median otherwise: near zero

It is evident from Table 21 that the main sources of the financial means are learners' fees and state subsidies; with regard to the latter it has to be taken into account that 55 of the 122 institutions responding to the longer version of the questionnaire are state owned.

3.2: General characteristics of the institutions/"26"

Table 22: Estimated percentage of financial means for each department (L6):

N, f₀, f_{≥50}, f_{≥80}: see Table 21

Department/task	N	range	f ₀	f _{≥50}	f _{≥80}
- teaching:.....	92	0-100%	4	48	7
- administration:.....	90	0- 60%	3	5	0
- counselling/tutoring:.....	91	0- 70%	31	2	0
- advertising/information:....	91	0- 50%	31	1	0
- exams/certificates:.....	90	0- 15%	46	0	0
- research/evaluation:.....	90	0- 40%	38	0	0
- subsidiary services (e.g. libraries):.....	92	0- 49%	26	0	0
- other):.....	95	0- 50%	65	1	0

median for teaching: between 48 and 50%;
 median for administration: 17%;
 median otherwise: less than 5%

For most institutions the main expenditure is on teaching (beside expenses for administration). More than one half of the institutions (48 from 92) spend 50% or more of their money on teaching and 7 from 92 institutions spend 80% or more on this task.

The fact that few private, 'proprietary' correspondence schools have answered is evident from the minimal sums invested in advertising/information.

Table 23: Share of personnel costs in the overall costs (L7):

N=96; (26 x "no answer");
 range: 0% to 90%.
 first quartile ≈ 40%;
 median ≈ 64%;
 third quartile ≈ 75%;

Personnel costs are the largest budget item for the majority of the institutions: 67 of the institutions spend 50% of their budget or more on personnel costs; 20 of the institutions spend 80% or more on personnel.

3.2: General characteristics of the institutions/"27"

Table 24: Proportions of personnel costs for the departments (L8):

N, f₀, f_{≥50}, f_{≥80}: see Table 21

<u>Department/task</u>	<u>N</u>	<u>range</u>	<u>Med</u>	<u>f₀</u>	<u>f_{≥50}</u>	<u>f_{≥80}</u>
- teaching:.....	80	0- 90%	40	6	36	5
- administration:.....	80	0-100%	18	3	8	2
- counselling/tutoring:.....	77	0- 75%	4	25	2	0
- subsidiary services:.....	81	0- 60%	3	34	2	0
- research/evaluations:.....	78	0- 41%	1	37	0	0
- exams/certificates:.....	78	0- 80%	0	42	1	1
- advertising:.....	78	0- 40%	0	42	0	0
- other:.....	81	0- 44%	0	62	0	0

The greatest proportion of personnel costs concern 'teaching' and 'administration'. It is unfortunate that respondents may have included the costs for commenting on students' papers and assignments either under 'teaching' or under 'counselling/tutoring'. Thus the actual figure for the latter may actually be - and probably is - considerably higher than appears from this table.

3.2.8 Co-operation with others

Table 25: Percentages of services rendered by the institution (L9):

f_{100%}: number of institutions rendering a particular service without help from other institutions

<u>service</u>	<u>N</u>	<u>f_{100%}</u>
- intellectual production of teaching material:...	111	69
- technical production of teaching material:.....	110	65
- counselling/tutoring:.....	112	78
- exams/certificates:.....	112	70
- evaluation of the teaching materials:.....	111	78
- 'pure' research:.....	111	52
- subsidiary services (e.g. computer center):.....	112	54
- advertising/information:.....	112	63
- administration:.....	113	82
- distribution:.....	113	81

3.2: General characteristics of the institutions/"28"

The comparatively low number of institutions producing teaching material on their own (see Table 25) indicate that several institutions obtain their material to some degree from others (e.g. from their 'mother'-institutions).

Several institutions employ not only their own staff members, but have in addition external teachers as well as external counsellors/tutors (primarily employed by other institutions) - see Table 26.

Apparently the majority of staff members are engaged in teaching (cf. Table 24 above; the greatest proportion of personnel costs is consumed by 'teaching').

Table 26: Number of staff members employed in the different departments (L21):

N : number of respondents
 Med : median for all respondents
 Med_{>0} : median for institutions responding with a number greater than zero
 f₀ : number of institutions responding with "zero"
 f_{>0} : number of institutions responding with a value greater than zero

a) internal: personnel employed by the institution itself

	N	range	Med	Med _{>0}	f ₀	f _{>0}
- teaching:.....	106	0-2,000	16	27	20	86
- counselling/tutoring:...	97	0-2,150	3	5	27	70
- exams/certificates:.....	100	0 - 306	0	3	57	43
- research/evaluation:....	98	0 - 306	0	3	49	49
- subsidiary services:....	103	0 - 306	0	6	57	46
- technical services(printing, distribution etc.):.....	103	0 - 300	3	5	33	70
- administration:.....	102	0 - 559	6	7	6	96
- publicity/information:..	100	0 - 300	1	2	46	54
- others:.....	106	0 - 300	0	19	91	15

b) external: personnel employed by other institutions

	N	range	Med _{>0}	f ₀	f _{>0}
- teaching:.....	103	0-4,000	50	52	51
- counselling/tutoring:...	103	0 - 900	18	78	25
- exams/certificates:.....	103	0 - 300	12	85	18
- research/evaluation:....	101	0 - 134	6	91	10
- subsidiary services:....	103	0 - 134	14	96	7
- technical services(printing, distribution etc.):.....	103	0 - 111	6	85	18
- administration:.....	104	0 - 111	3	91	13
- publicity/information:..	103	0 - 111	20	96	7
- others:.....	105	0 - 88	30	100	5

3.2: General characteristics of the institutions/"29"

Many institutions (81 out of 106) report cooperation with other institutions, with 'traditional educational institutions' and other 'distance-education institutions' being mentioned most frequently (Table 27).

Table 27: Co-operation with other institutions/type of co-operating institution (L26):

"yes": 104; "no": 15; "no answer": 3

f : frequency of mentioning

<u>type of co-operating institution</u>	<u>f</u>
-- traditional educational institutions:.....	81
-- distance-teaching institutions:.....	74
-- radio or television stations:.....	44
-- publishing houses:.....	34
-- administrations:.....	20
-- advertising agencies:.....	20
-- others:.....	19

(16 x "no answer" for the question as a whole)

The fields of more intensive co-operation seem to be 'examinations', 'production of teaching material', and 'use of services and buildings' (see Table 28).

Table 28: Intensity of co-operation with other institutions (L27):

5-point response scale from "0: no intensity" to "4: very much"

N : number of respondents

f₃₊₄ : frequency of "3: much" + "4: very much"

	f ₃₊₄	N
-- intellectual production of teaching material:....	27	98
-- technical production of teaching material:.....	26	97
-- use of media:.....	19	98
-- study centres:.....	21	98
-- subsidiary services:.....	14	98
-- examinations:.....	33	98
-- certificates:.....	22	96
-- research/evaluation:.....	13	98
-- distribution:.....	16	98
-- use of staff:.....	10	98
-- administration:.....	9	98
-- use of services/buildings:.....	24	98
-- publicity:.....	18	98
-- others:.....	5	98

3.2: General characteristics of the institutions/"30"

3.2.9 Importance of computer for the various departments

The computer is used primarily for administration and for (technical and subsidiary) services (Table 29).

Table 29: Importance of computer for the different departments (L22):

5-point response scale from "0: no importance" to "4: very much"

N : number of respondents

f₀ : frequency of answers "0: no importance"

f₃₊₄: frequency of answers "3: much" + "4: very much"

	N	f ₀	f ₃₊₄
- teaching:.....	108	43	19
- counselling/tutoring:.....	107	61	11
- exams/certificates:.....	106	44	26
- research/evaluation:.....	108	45	25
- subsidiary services:.....	106	53	32
- technical services:.....	105	51	36
- publicity/information:.....	108	53	26
- administration:.....	107	27	52
- others.....	105	101	4

3.2.10 Success, non-starter and drop-out rates

"Success", "drop-out", and "non-starter" can be defined in different ways.

Although we had tried to give short definitions in the questionnaire many responses on the questions in the questionnaires show that these terms are used in very different ways.

Accordingly the 'non-response rates' for these questions are rather high (This is especially true for the questions referring to success, drop-out, and non-starter rates differentiated by subject areas).

Therefore the rates for the courses with the highest number of enrolments (Table 30) may be taken only as rough indicators of success and failure.

3.2: General characteristics of the institutions/"31"

Table 30: Success rate and non-starter rate (average percentage for the three courses with the highest number of enrolments) (Q53/54)

- Success rate (Q53)

range: from 1% to 100%
median:.....~67%
first quartile:....~50%
third quartile:....~84%

52 institutions report success rates equal or higher than 80%;
N=139; 58 x "no answer;

- Non-starter rate (Q54):

range: from 0% to 70%
median:.....~10%
first quartile:....~ 5%
third quartile:....~27%

48 institutions report non-starter rates equal or higher than 20%;
N=121; 76 x "no answer;

The data to Q52 can hardly be interpreted; the 'non response'-rates are high (f_{no answer}: from 109 to 186). Therefore here only some tendencies (see Table 31).

Table 31: Success rate, drop out rate, and non-starter rate per subject area (Q52)

- a) success rate for curriculum: number of institutions reporting success rates of "80% or higher" ($f_{\geq 80}$)
- b) drop out rate for curriculum: number of institutions reporting drop out rate of "50% or higher" ($f_{\geq 50}$)
- c) non-starter rate for a course: number of institutions reporting non-starter rate of "20% or higher" ($f_{\geq 20}$)

Subject areas:

- (1) education, the humanities, music and the arts, languages
- (2) social sciences and law
- (3) economics
- (4) agricultural sciences, agricultural and sylvicultural professions
- (5) mathematics, sciences and engineering
- (6) medicine and medical jobs and professions
- (7) others

subject area:	a) success		b) drop out		c) non-starter	
	N_a	$f_{\geq 80}$	N_b	$f_{\geq 50}$	N_c	$f_{\geq 20}$
(1) education.....	61	30	62	9	88	9
(2) social sciences..	27	6	35	7	53	7
(3) economics.....	21	4	33	8	50	6
(4) agriculture.....	8	1	10	2	17	3
(5) math., science ...	33	6	40	12	57	7
(6) medicine.....	11	9	11	0	15	0

It is hardly surprising to see that the 'success rates' are highest for 'education' and the 'drop-out rates' highest for 'mathematics and science'.

3.2.11 Summary of section 3.2

- The majority of the institutions in the sample were founded after World War II (Table 4)
- About one half of the institutions are state owned (Table 5)
- The most frequently mentioned aims of the institutions are:
 - opening of study opportunities to new target groups
 - offer of further training opportunities;
 on the other hand, 'profit' is relatively seldom mentioned (Table 6)
- The majority of the institutions offer courses on level III (university study and/or further professional training). About one third of the institutions are universities (Tables 7 and 9)
- Frequently mentioned subject areas for which courses are offered are
 - education
 - economics
 relatively seldom offered are courses for:
 - agriculture
 - medicine
 (Tables 8 and 10)
- The most frequently used teaching mode is 'distance teaching with a few face-to-face elements (Table 12)
- About one half of the institutions have study centres which rather have the function of support to distance learning than that of compulsory (face-to-face) teaching (Table 13)
- The institutions differ in the degree of flexibility or in the number of options offered to the learners. Most frequently mentioned options are:
 - when to start studies
 - when to use counselling services (Table 14).
 Some institutions offer options with regard to the curricula, too (e.g.: fixed curriculum, but it contains alternatives) (Table 15)
- There are great differences between the institutions with regard to:
 - the number of learners (Table 16)
 - the number of courses offered (Table 19)
 - the number of staff members (Table 26)
- The courses with the greatest numbers of enrolments are those in "education" (Tables 17 and 18)
- The annual budget (in US \$) varies considerably; the median is between 500,000 and one million (Table 20)
- The most important sources of financial means are:
 - learners' fees
 - state subsidies
 (Table 21)
- The greatest proportion of the financial means is spent on teaching, followed by administration (Table 22)
- Personnel costs are a very important part of the expenses (Median: 64% of the overall costs) - (Table 23). And the greatest part of these costs concerns teaching (Table 24)
- Many institutions obtain their teaching material from other institutions (at least to some extent - Table 25) and/or employ personnel from other institutions for teaching and/or counselling (Table 26)

3.2.11 Summary of section 3.2/"34"

- Partners of co-operation frequently mentioned are traditional educational institutions and other distance-education institutions (Table 27)
- The differences between the institutions with regard to the success, drop-out, and non-starter rates are great (Tables 30 and 31).

3.3 Learning and teaching¹⁾

(M. Weingartz)

Distance education takes place between the contradictory poles of independence and control:

- How much control is necessary for the learner to be able to manage?
- How little control is feasible in order to guarantee attention to the individual learner?

The solution of this problem is not only a matter of quantity - we must also ask ourselves what measures contribute to fostering independence in a meaningful way.

The results of our first study (cf. Bückmann, N., Holmberg, B., Lehner, H. & Weingartz, M.,: *Steuerung und Selbständigkeit im Fernstudium*; Hagen, July 1985) show that a considerable majority of distance education institutions claim to foster independence. Concepts of independent learning and acting differ widely, however. These differences refer above all to the degree of individualisation²⁾.

As far as study activities are concerned, three areas of independence may be distinguished:

- study goals
- carrying out learning tasks and organising study
- evaluation of study results

3.3.1 Study goals

A student studying to pass a specific exam or obtain a specific degree, will, as a rule, have little opportunity to choose study contents autonomously. There are a few distance education institutions, however, who even in such cases offer a large degree of freedom and independence (Q22). See Table 15 under 3.2.5 above.

Almost 50 per cent of the institutions in our sample offer students at least the possibility of choosing between alternatives when deciding upon study contents. Roughly 20 per cent of all institutions let students choose freely within a set framework.

There is also a small group of distance-education institutions which take the individual student's needs and practical problems

1) In this section only the shorter questionnaire is referred to. "Q" thus refers to its question numbers.

2) A high degree of individualisation can be said to exist in cases where students can, after prior consultation with their teachers or tutors, develop a curriculum adapted completely to their wishes and needs. This is then provisionally laid down in writing, but can be revised during the course of study. The tutor here rather plays the role of a friend and specialist giving advice, pointing out possible problems and making suggestions. *Steuerung und Selbständigkeit*, p. 7

3.3 Learning and teaching/"36"

as a starting point , i.e. the learner can, with the help of a tutor, elaborate his/her own study plan or develop an individualised learning contract (Q23).

Table 32: Opportunity for learners to design (with the help of tutors) study programmes tailored to their individual needs, for which there does not exist any pre-produced study material (Q23):

"yes":..... 30

"no":.....158

"no answer": 9

Use of learning contracts:

"yes":.....12

"no":.....24

"no answer"/

"not applicable": 9

3.3.2 Carrying out learning tasks and organising study

This area undoubtedly contains the greatest range of variation between the two poles of independence and control.

The answers to the question concerned with the main educational aim of the distance education offered by an institution does not give any information about any predominant tendencies amongst the institutions (Q24).

Table 33: Main aim of distance study (Q24):

	"yes"	"no"
- imparting factual knowledge.....	112	78
- promoting the development of the ability to apply knowledge to:		
- tasks of limited scope.....	88	102
- complex problems.....	102	88
- encouraging students to make investigations of their own.....	71	119

(7 x no answer")

If the answers 'imparting factual knowledge' and 'promoting the development of the ability to apply knowledge to tasks of limited scope' are classified as 'low individualisation' and 'promoting the development of the ability to apply knowledge to complex problems' and 'encouraging students to make investigations of their own' as 'high individualisation', the institutions can be divided into two groups of roughly the same size.

3.3 Learning and teaching/"37"

More or less the same applies to question 25. The answers given are evenly distributed over the whole range of possibilities. About two thirds of the institutions can be considered 'hardly individualising' (their examination requirements put 'much' or 'a lot of' stress on the 'reproduction of facts' and 'the application of knowledge to tasks of limited scope'). The institutions stressing individualisation to a high degree are in a minority.

Table 34: Extent to which examinations stress different requirements (Q25):

5-point response scale from "0: no stress" to "4: a lot".

f_{3+4} : frequency of responses "3: much" + "4: a lot"

	f_{3+4}	N

- the reproduction of facts.....	87	185
- the application of knowledge to:		
- limited tasks.....	86	182
- complex problems.....	89	181

One way of fostering independence is working independently on not too limited tasks. Self-checking questions might serve as incitements to this kind of work.

3.3 Learning and teaching/"38"

Table 35: Purpose of self-checking exercises (Q26):

N: Number of responding institutions

	<u>"yes"</u>	<u>N</u>
- to support retention of facts.....	132	163
- to make learners practise acquired knowledge.	142	164
- to make learners question claims and basic assumptions put forward in study material....	69	160

The tendency mentioned for question 25 is even stronger in the answers to this question. Only a bare third of the institutions use self-checking questions in order to incite the learner to make use of his/her own knowledge and develop solutions or attitudes independently.

The encouragement of study groups or self-help groups is another possibility.

Table 36: Encouraging of study groups (Q27):

"yes": 124 / "no": 64 / "no answer": 9

At first sight a surprisingly large number of institutions, almost two thirds, answered this question in the affirmative. Measures of this type might, however, be counteracted by deficits in the study material, the structure of which may limit independent learning or demotivate the learner.

3.3 Learning and teaching/"39"

3.3.3 Evaluation of study results

Study results are generally evaluated by the institution, without any participation by learners. A fixed curriculum usually also means fixed assessment standards, leaving hardly any possibility of taking into account learners' self-assessment. This differs only for those institutions that make it a task for the learner to draw up his/her own study plan. Those institutions also see one of their educational objectives in the learner's ability to assess her/his own performance.

Table 37: Participation in assessment of learners' performance (Q28):

assessment by:	"yes"	"no"	N
- the institution only.....	167	22	189
- another institution	28	161	189
- the institution together with the learner.....	36	153	189
- the learner; the institution then assesses the learner's assessment.....	12	177	189

(8 x "no answer")

3.3.4 Construction of composite scores

In addition to the analysis of answers to individual questions we tried to assess 'independence' by means of composite scores allowing the definition of differing degrees of independence. Following our assumption that distance education takes place between the two poles of independence and control this score of independence ought to state the extent of encouragement of autonomous actions. Control is as indispensable in distance education as in face-to-face education, as the student generally does not know from the start what knowledge and skills he/she needs to acquire in order to satisfy the requirements of a particular profession she/he is interested in.

The learner therefore needs guidance or control coming from the institution. In distance education we can distinguish between controlling measures that do not, or only to a small extent, consider the individual learner and above all guide learners towards a prescribed aim, and those controlling measures that include the skills, level of knowledge, needs and wishes particular to the individual learner.

In the following passages we therefore distinguish between a more goal-oriented type of control and a more individualised type. We assume that goal-oriented control frequently makes use of measures that may lead to a restriction of the individual's work and therefore in the long run do not really support independence but actually could counteract it.

3.3 Learning and teaching/"40"

3.3.4.1 Score of independence

The score is to indicate the extent of support enabling the learner to keep up self-directed study activities, i.e. activities that do not depend on the presence of a teacher.

The score is to rise

- if the institution enables the learner to be flexible with regard to pacing, and if at least two of the following flexibility components apply:
 - when to start a course/the studies (Q9a)
 - when to take exams/final exams (Q9b)
 - when to order study material (Q9c)
 - when to submit assignments (Q9d)
- if the institution allows the students options regarding study contents, and if one of the following components applies:
 - the curriculum is fixed, but contains alternatives (Q22b)
 - the curriculum can be chosen freely within a set framework (Q22c)
 - study programmes may be tailored to individual needs (Q23a)
 - learning contracts (Q23b)
- if the institution mainly aims at promoting the development of problem-solving abilities, and if one of the following components applies³⁾:
 - the institution mainly aims at promoting the development of the ability to apply knowledge to complex problems or at encouraging students to make investigations of their own (Q24b2 viz. Q24c)
 - examination requirements stress the application of knowledge to complex problems (Q25b2)
- if the institution uses self-checking exercises in order to make learners question claims and basic assumptions put forward in study material (Q26c)
- if the institution considers it necessary constantly to stay in touch with the learners, the initiative to this, however, is not left with the students, but the institution contacts those who have not been in touch for a certain time (Q34a).
- if the assignments for submission are commented on as extensively as possible as that kind of feedback is most likely to make the learners feel secure and give them hints on their learning deficits (Q47a,b,d: comments of half to more than one page of the size of this report).
- if the institution follows its central idea even in the area of evaluation and assesses learner performance in cooperation with learners (Q28b,c).

3) It was possible to combine these two characteristics, because our first survey already showed a significant correlation there

3.3 Learning and teaching/"41"

Table 38: Item-intercorrelations for the score of independence⁴⁾

	*: $p \leq .01$			+: $p \leq .05$			
	R9b	R22/23	R24/25	R26c	R34	R47	R28bc
R2223	-0.07						
R2425	-0.09	0.16*					
R26c	-0.02	0.08	0.32*				
R34	0.22*	0.05	0.07	0.09			
R47	0.08	0.06	0.14+	0.19*	0.13+		
R28bc	-0.00	-0.03	0.14+	0.12	0.08	0.01	
item-scale correlation (corrected for the part-whole effect):							
r_{it}	0.04	0.08	0.26	0.27	0.10	0.22	0.21
Scale reliability (Proctor 1971) $r_{tt} = .41$				coefficient of reproducibility (Guttman) $r_p = .71$			

The table above shows that the following correlations are significant:

- If there is a tendency for the institution mainly to stress as the aim of its teaching the development of learners' problem-solving abilities (R24/25),
 - then the institution provides a rather open curriculum (choice between alternatives or free choice within a set framework or even drawing up individual study plans) (R22/23);
 - then students are more frequently encouraged to question claims and basic assumptions put forward in study material (R26c);
 - then assignments for submission are commented on as extensively as possible (R47a,b,d);
 - then learner performance is more frequently assessed in cooperation with students or the learner assesses his/her own performance and the institution then assesses the learner's assessment (R28b,c).
- If distance education institutions attach importance to the learners' questioning claims and basic assumptions put forward in study material (R26c) or keep in constant touch with the students instead of leaving the initiative to them (R34), then there is also extensive commenting of assignments (R47a,b,d).
- If the institution itself contacts students who have not been in touch for some time (R34), there is the additional tendency of flexibility in pacing (R9b). Flexibility in pacing does not play an important role otherwise; there even is a slightly negative correlation with a few items. The reason for this might be that with highly individualised forms of education, pacing is of

4) Each item is transformed in such a way that it is scored one ("1") if it points in the direction of 'independence' and is scored zero ("0") otherwise. This implies that 'non response' is scored as zero. The scores of individualised control viz. goal-oriented control - see below - are constructed in the same way.

3.3 Learning and teaching/"42"

considerable importance. It is one of the factors in learning contracts, for instance.

3.3.4.2 Score of *individualised* control

The score is to indicate the extent of that control that takes into account and activates learners' previous knowledge, individual characteristics and aims.

The score is to rise

- if the function of study centres is to support distance learning, but participation is not compulsory (Q17b)
- if two-way communication is a constitutive element of the services offered by the institution, i.e. there is regular mediated or direct personal contact between tutor and student viz. there is a response to learners' queries, requests etc. (Q29c1,2,e)
- if the institution offers individualised tutoring and counselling services (Q30a2,b,c2,d = Q30T)
- if learners are assigned a personal tutor/counsellor (Q36)
- if assignments for submission are commented on (Q46)
- if tutors' comments refer to students' individual achievements (Q48)
- if the person who corrects and comments on students' assignments is also responsible for counselling (Q49a,b,c)

Table 39: Item-intercorrelations of the score of individualised control

		*: $p \leq .01$		+: $p \leq .05$			
	Q17b	Q29c1,2,e	Q30T	Q36	Q46	Q48	Q49a,b,c
Q29c1,2,e	.06						
Q30 T	.05	.18+					
Q36	-.06	.04	.08				
Q46	.03	.08	.12+	-.03			
Q48	.04	.18*	.14+	-.08	.41*		
Q49a,b,c	.03	.26*	.16+	.07	.50*	.31*	
item-scale correlation (corrected for the part-whole effect):							
$r_{i,t}$	.05	.25	.22	.01	.40	.33	0.46
Scale reliability (Proctor 1971) $r_{tt} = .76$				coefficient of reproducibility (Guttman) $r_p = .89$			

The table above shows that the following correlations are significant:

If two-way communication is a constitutive element of the services offered by the institution (Q29c1,2,e),
- then there are also individualised tutoring and counselling services (Q30 T);

3.3 Learning and teaching/"43"

- then tutors' comments also refer to individual achievements (Q48);
- then the person who corrects and comments upon students' assignments is also responsible for counselling (Q49a,b,c).

If assignments for submission are commented upon (Q46)

- then tutors' comments also refer to individual achievements (Q48);
- then the person who corrects and comments upon students' assignments is also responsible for counselling (Q49a,b,c).

And: if tutors' comments also refer to individual achievements (Q48) then the person who corrects and comments upon students' assignments is also responsible for counselling (Q49a,b,c).

Question 17 (the use of study centres to support distance teaching, no compulsory attendance) does not correlate with the other items/conditions. As we already assumed in our analysis in the interim report (Bückmann et al 1985, p.46), counselling in study centres is likely to be of little importance for institutions using highly individualised forms of control.

Question 36 (a student being assigned one single tutor) is of no significance. This result contradicts that obtained in our first survey. Possibly the reason could be that this item was answered in the affirmative by only 10 per cent of the institutions in our sample.

3.3.4.3 Score of *goal-oriented* control

The score is to indicate the extent of control exerted on the learner in order for him to reach a fixed aim (degree, diploma) as effectively as possible.

The score is to rise,

- if the institution encourages study groups (Q27)
- if the institution offers particular standardised procedures for tutoring and counselling (Q30a1)
- if the institution encourages the learners to approach their tutors when they feel they need assistance (Q33)
- if the institution employs measures to reduce the non-starter and drop-out rates (Q35a,c = Q35T)
- if the institution uses continuous assessment (Q38)
- if the assignments for submission mainly serve the purpose of assessing learner performance (Q39)

3.3 Learning and teaching/"44"

Table 40: Item-intercorrelations of the score of goal-oriented-control						
	Q27	Q30a1	Q33	Q35T	Q38	Q39
Q30a1	-.08					
Q33	.13+	.18*				
Q35 T	-.15+	.33*	.02			
Q38	-.05	.13	.14	.08		
Q39	-.07	.01	.04	-.05	.07	
item-scale correlation (corrected for the part-whole effect):						
r_{it}	-.11	.24	.22	.15	-.02	.09
Scale reliability (Proctor 1971) $r_{tt}=.51$			coefficient of reproducibility (Guttman) $r_p=.81$			

The table shows some interesting correlations between the following items:

- If the institution offers standardised procedures for tutoring and counselling (Q30a1),
- these consist, among other things, in encouraging learners to approach their tutors when they feel they are in need of assistance (Q33);
 - it will more frequently send students preproduced (standardised) reminders/letters (or tapes) of encouragement as a means to reducing non-starter and drop-out rates (Q35T);
 - it will use continuous assessment (Q38)

These items partly also correlate among each other (Q33 - Q38):

If the learners are encouraged to approach their tutors (Q33), this also entails stronger encouragement of study groups (Q27). The encouragement of study groups is of no other significance for this score. In our first survey our assumption that it is exactly in a situation of stronger control that study groups are encouraged (possibly to counterbalance that control) had been broadly confirmed.

Individualised courses of study may as such produce higher motivation for communication since everyone works on different problems and solutions. The importance generally attributed to study groups is such that there can be no general confirmation of our assumption.

3.3 Learning and teaching/"45"

3.3.5 Distribution of Scores

The score for independence extends over seven levels, which results, for the 197 institutions in the sample, in the following distribution:

Table 41a: Distribution of the score for independence

range: 0 - 7
first quartile \approx 2
median \approx 3
third quartile \approx 4

The score for goal-oriented control extends over six levels, resulting in the following distribution:

Table 41b: Distribution of the score for *goal-oriented* control

range: 0 - 6
first quartile \approx 2.5
median \approx 3
third quartile \approx 4

The score for individualised control extends over six levels, resulting in the following distribution:

Table 41c: Distribution of score for *individualised* control

range: 0 - 6
first quartile \approx 3
median \approx 4.5
third quartile \approx 5

3.3.6 Correlations between the scores of independence and control and the success rate

The success of distance education institutions is usually measured by the study success of their students.

In this context, success is measured by the following items:

- Question 53: How high is, in the three courses with the highest number of enrolments last year, the average percentage of those finishing a course successfully?
- Question 54: How high is, in the three courses with the highest number of enrolments last year, the average percentage of those who after enrolment have submitted no assignment?

Table 42: Correlations of scores for independence and of control with success

	Scores: indep.	goal-or. control	individ. control
success (Q53)	.19	.07	.24
non-starter rate (Q54)	-.19	-.01	-.08

The components most crucial to success are apparently a relatively high amount of independence and forms of control that are as highly individualised as possible. As a consequence these components show a negative correlation with the percentage of assignments not returned to the institution. Goal-oriented control or rather those, mostly standardised, measures that are subsumed under this heading, does not seem to have any significant effect on success.

3.3.7 Summary of section 3.3

Autonomy is an important educational aim not only in distance education. It is the situation of the distance-education learner that makes the question about independent behaviour a special problem.

On the other hand difficulties in attaining and fostering independence are easier to define for distance-education institutions because of the typical teaching/learning organisation where elements like study material, two-way communication are separated in advance. Thus the defining of measures which help to foster independence in distance education might be fruitful also for other types of educational institutions.

Apart from analysing answers to individual questions concerning study goals, study organisation and evaluation of study results we constructed a score defining different degrees of independence. Since distance education is not possible without control, especially at the beginning of a course, we therefore constructed two further scores which distinguish a more goal-oriented type of control and a more individualised type of control. The question is which measures of control support independence and which measures might counteract it.

A final correlation of the scores with the success and non-starter rate showed that measures of independence are important for the study process. The measures of individualised control seem to be of similar importance.

These results raise the question, to what extent, if at all, control has any effect on the course somebody's studies take or if maybe measures fostering independence might suffice. This question will be discussed in a forthcoming publication.

3.4 Teaching Media

(F. Doerfert & C. See-Bögehold)

With FernUniversität experiences and results from previous studies in mind, we had very specific expectations as to the outcome of this survey. These are reflected by our comments on the individual tables.

Table 43: Media used for each subject area

<u>subject areas:</u>							
(1)	education, the humanities, music and the arts, languages						
(2)	social sciences and law						
(3)	economics						
(4)	agricultural sciences, agricultural and sylvicultural professions						
(5)	mathematics, sciences and engineering						
(6)	medicine and medical jobs and professions						
(7)	others						
<u>Medium/subject areas:</u>							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	Sum
radio							
42	21	16	6	14	5	8	112
TV							
35	25	16	4	18	6	8	112
written course unit							
130	89	84	31	87	28	43	492
audio tape							
97	45	32	8	30	16	21	249
video tapes							
55	30	26	11	35	14	15	186
film							
28	12	13	6	11	6	4	80
slides							
35	12	11	11	22	8	5	104
electr. data processing							
10	4	7	2	16	4	7	50
PC							
17	7	13	4	33	5	8	87
telephone							
55	39	37	10	33	14	16	204
face-to-face sessions							
83	53	46	12	53	16	19	282
laboratories/workshops							
34	16	12	7	46	12	7	134
others.							
7	7	10	6	22	5	7	064
Sum							
628	360	323	118	420	139	168	2156

3.4 Teaching Media/"48"

Printed material is the main medium in all subject areas, as was to be expected; rather unexpectedly, however, face-to-face sessions are frequently used in distance education - amazingly altogether more frequently than telephone tutoring.

The answers to the corresponding question (L30) in the longer version of the questionnaire show a more detailed picture (see Tables 45a,b); there the subject areas are more differentiated. The long version was answered by 122 institutions (N=122).

- use of media (L30):

85 out of 116 institutions (6 x "no answer") say that they use different media for different subject areas

'Written course units' are the the medium mostly used for all subject areas (see Table 44a,b).

The total of 1738 nominations is distributed over the media (sum per rows in Table 44b):

Table 44a: Use of media (L30)		
f	: frequency of mentioning	
%	: percentage related to the over all total of 1736 nominations	
medium	f	%
- written course unit:.....	446	25.7%
- face-to-face sessions:.....	234	13.5%
- audio tapes:.....	201	11.6%
- telephone:.....	150	8.6%
- video:.....	142	8.2%
- laboratories/workshops:....	106	6.1%
- radio:.....	101	5.8%
- TV:.....	83	4.8%
- slides:.....	76	4.4%
- PC:.....	73	4.2%
- film:.....	61	3.5%
- electronic data processing..	33	1.9%
- others:.....	32	1.8%

3.4 Teaching Media/"49"

media used frequently for each subject area (in brackets: the frequency of mentioning - see also Table 44b):

- Education, teacher training: Written course unit (48), face-to-face sessions (32), audio tape (25) and video (23); sum of nominations for this subject area: 239
- Humanities, music and the arts: Written course unit (45), face-to-face sessions (25), audio tape (23) and radio (16); sum of nominations for this subject area: 176
- Languages, linguistics: Written course unit (56), audio tape (39), face-to-face sessions (29), video (14), Radio and telephone (13 each); sum of nominations for this subject area: 191
- Law and legal professions: Written course unit (25), face-to-face sessions (15), audio tape (11), radio (5) and telephone (6); sum of nominations for this subject area: 82
- Economics: Written course unit (55), face-to-face sessions (27), audio tape (20) and telephone (19); sum of nominations for this subject area: 190
- Agriculture: Written course unit (16), slides and telephone (7 each), video and face-to-face sessions (6 each); sum of nominations for this subject area: 67
- Engineering and technical professions: Written course unit (32), laboratories/workshops (23), face-to-face sessions (19) and PC (17); sum of nominations for this subject area: 164
- Sciences: Written course unit (37), face-to-face sessions (20), laboratories/workshops (18), video and audio tapes (12 each); sum of nominations for this subject area: 145
- Mathematics: Written course unit (41), face-to-face sessions (16), PC (10), audio tapes (10); sum of nominations for this subject area: 118
- Social sciences: Written course unit (49), face-to-face sessions (27), audio tapes (23), telephone (22), video (18) and TV (15); sum of nominations for this subject area: 193
- Medicine and medical jobs: Written course unit (19), audio tapes (12), face-to-face sessions (11), and video (9); sum of nominations for this subject area: 88

Table 44b: Media used for each subject area (L30)

- Subject areas:
- (1) education, teacher training
 - (2) humanities, music and arts
 - (3) languages, linguistics
 - (4) law and legal professions
 - (5) economics
 - (6) agriculture, sylviculture, forestry
 - (7) engineering and technical professions
 - (8) sciences
 - (9) mathematics
 - (10) social sciences
 - (11) medicine and medical jobs
 - (12) others

(Continued)

3.4 Teaching Media/"50"

Table 44b: Media used for each subject area (L30) - *Continued*

Medium/subjects areas:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	Summe
Radio	17	16	13	05	09	05	03	07	06	12	04	04	101
TV	17	08	06	04	08	03	06	06	05	15	03	02	83
Written course unit	48	45	56	25	55	16	32	37	41	49	19	23	446
Audio tapes	25	23	39	11	20	4	10	12	10	23	12	12	201
Video	23	15	14	03	14	06	16	12	06	18	9	6	142
Film	11	09	06	03	08	02	06	03	03	05	03	02	61
Slides	13	09	03	02	06	07	09	09	04	06	04	04	76
Electronic data processing (mainframe)	5	00	01	01	03	01	08	02	03	01	02	06	33
PC	07	02	02	03	08	04	17	06	10	04	04	06	73
Telephone	22	16	13	06	19	07	12	11	07	22	08	07	150
Face-to-face sessions	32	25	29	15	27	06	19	20	16	27	11	07	234
Laboratories/workshops	17	06	07	03	08	03	23	18	04	08	06	03	106
others:	02	02	02	01	05	03	03	02	03	03	03	03	032
Sum	239	176	191	82	190	067	164	145	118	193	088	085	1738

3.4 Teaching Media/"51"

Table 45: Particular prescribed combinations of media

"yes": 58 / "no": 104 / "no answer": 35

Compulsory media combinations are used much more frequently than we had expected.

Table 46: Share of the different media in the combinations

N : number of respondents
 f_o : frequency of answers "0"
 Med_{>0} : median for those institutions reporting percentages 'greater than zero' for a medium

Medium	N	range	f _o	Med _{>0}
radio.....	124	0- 80	97	5
TV.....	123	0- 70	101	3
written course unit.....	125	0-100	6	70
audio tape.....	123	0- 80	48	5
video tapes.....	126	0- 40	73	5
film.....	128	0- 10	112	2
slides.....	128	0- 5	99	2
electr. data processing.....	127	0- 20	109	2
PC.....	126	0- 40	94	3
telephone.....	126	0-100	70	5
face-to-face sessions.....	125	0- 80	50	10
laboratories/workshops.....	129	0- 47	100	5
others.....	129	0- 50	118	4

Table 47: Course teams (Q13):

"yes": 145 / "no": 38 / "no answer": 14

This extensive use of course teams corresponds with our expectations.

Table 48: Participants of course teams (Q14):

f : frequency of tick-offs
 % : percentage related to the total number of nominations (N=229)

	f	%
- subject specialists/students of the subject/ media specialists.....	40	17.5
- subject specialists/media specialists.....	79	34.5
- subject specialists.....	110	48.0

It can be regarded as very interesting that quite a number of institutions include students in their course teams; the tasks assigned to students in this context will be subjected to further study. It is surprising that almost half of all institutions exclusively employ subject specialists for course development. It will be worth while finding out whether the material produced by these institutions shows a deficit as to media aspects.

Table 49: Internal/external media specialists for course development (Q15)

- internal/members of staff of the institution.....66
- external/outside specialists.....29
- partly internal/partly external.....54

(48 x "no answer")

Many institutions also consult external media specialists for course development.

Table 50: Study centres and their function (Q16/17):

- study centres: yes/no

"yes":.....99

"no":.....94

"no answer":..4

- function of study centres:

the study centres have rather the function of support of distance learning (voluntary participation) (72 x) than the function of compulsory face-to-face teaching (54 x)

3.4 Teaching Media/"53"

Table 51: Evaluation of study material (Q18):

the evaluation refers to:

	"yes"	"no"
- particular course units....	139	28.
- particular curricula.....	79	88
- media aspects.....	77	90

(30 x "no answer")

There is more frequent evaluation of media than we had expected.

Table 52: Selection of media used (Q19):

	"yes"	"no"
- mostly on the basis of general guidelines.....	52	132
- mostly on the basis of guidelines formulated within the institution.....	111	73
- mostly as a matter of intuition.....	37	147
- on the basis of material produced by other institutions.....	44	140
- others	44	140

Table 53: Estimated percentage of expenditure on media - related to the overall budget (Q20)

N=113 respondents (84 x "no answer")

range: 0-100%

Median \approx 12

$f_{\geq 50}$ = 13 (number of institutions spending 50% or more of their budget on media)

It is remarkable that some institutions should state that they use 50% or more of the money at their disposal for media development.

Table 54: Number of members of staff developing media (Q21):

N=144 respondents (53 x "no answer")

range: 0-380

Median \approx 4

up to 10 members: 104 institutions

from 11 to 50: 27 "

more than 50: 13 "

3.4 Teaching Media/"54"

It was to be expected that in distance education a comparatively large number of staff members would be employed in media development.

Summary of section 3.4

In conclusion we may say that most of the results were in accordance with our expectations. The medium primarily used in distance education is printed material. It is, however, remarkable that face-to-face sessions should come second in frequency. This might point to shortcomings in purely mediated distance teaching which are essentially compensated for by face-to-face sessions.

We would also like to mention an investigation currently being carried out in the media domain. Media specialists at different institutions were approached directly in order to obtain detailed and extensive information for the analysis of the media presentation of distance study material.

3.5 Two-way communication: tutoring, counselling and assessment

(R. Schuemer)

The following two sections describe frequencies of responses on questions with regard to 'tutoring and counselling' (3.5.1) and to 'assessment of learners' performance' (3.5.2). Section 3.5.3 presents a concept attempting to integrate some of the variables; their intercorrelations and the relationships between them and the success rate are described.

3.5.1 Tutoring and counselling

90% of the institutions (176 of 194; 3 x "no answer") offer a counselling and tutoring service (Q30). It includes telephone service and written correspondence at the great majority of institutions (151 x and 145 x, resp.; see Table 55); but also opportunities for counselling by face-to-face contacts are offered by more than an half of the institutions (116 x); tutoring/counselling by audio tape is offered less frequently (60 x).

The written correspondence for tutoring contains individualised letters (127); standardised letters or pre-programmed text modules are used less frequently (71 and 32 x, resp.).

The tutoring/counselling service can be contacted not only on weekdays during the usual office hours but also beyond these hours in some institutions (see Table 56a,b).

Table 55: Media used in two-way communication/counselling and tutoring service (Q30):

	"yes"	"no"	N
- number of institutions with counselling and tutoring services:.....	176	18	194
Media:	"yes"	"no"	N
- written correspondence:.....	145	26	171
- standardised letters:.....	71	74	145
- individualised letters:.....	127	18	145
- use of text-modules:.....	32	113	145
- telephone:.....	151	28	179
- audio tapes:.....	60	91	151
- direct (face-to-face) contacts:.....	116	32	148

34 institutions use each of the 4 media (written correspondence, telephone, audio tapes, and face-to-face contacts), 71 use 3 media, and 53 use 2 of them.

3.5 Two-way communication: tutoring, counselling and assessment/"56"

Table 56a: Times/hours for contacting the counselling services by telephone (Q31):

	"yes"	N
- on workdays during usual office hours:.....	147	168
- on workdays after usual office hours:.....	42	168
- on week-ends:.....	38	168
- other:.....	9	167

Table 56b: Times/hours for contacting the counselling services directly (e.g. in study centres) (Q31):

	"yes"	N
- on workdays during usual office hours:.....	72	168
- on workdays after usual office hours:.....	19	168
- on week-ends:.....	30	168
- other:.....	4	167

The estimations of the proportion of learners using the services (Q32; see Table 57) vary to a high degree; the overall proportion is rather low (median between 35 and 40%).

The corresponding data - differentiated according to subject area - cannot be interpreted because of high occurrences of "no answer" ($f_{\text{no answer}} \geq 160$).

Table 57: Percentages of learners using the counselling services (Q32):

N=117 respondents (80 x "no answer")
 median: between 35% and 40%
 first quartil: between 10% and 15%
 third quartil: between 75% und 80%
 range: from 0 to 100%;

Almost all institutions (192 out of 197) consider two-way communication a constitutive element of their services (Q29), with correction of and commenting on assignments playing an important part (see Table 58).

3.5 Two-way communication: tutoring, counselling and assessment/"57"

Table 58: Elements of two-way communication (Q29):

f : frequency of mentioning
% : percentage related to N=934 nominations

	f	%
- correction of assignments.....	172	(18.4%)
- commenting of assignments.....	175	(18.7%)
- regular contacts between tutor and learner: mediated contact.....	84	(9.0%)
- regular contacts between tutor and learner: direct face-to-face contact.....	98	(10.5%)
- organised face-to-face sessions.....	114	(12.2%)
- answering of learners' queries, requests etc.....	169	(18.1%)
- contacts with learners initiated by the institution.....	99	(10.6%)
- other.....	23	(2.5%)

The great majority of the institutions uses several of these elements; the number of elements per institution varies between 2 and 8; the distribution:

- 0-2 elements: 17 x (8.6 % for N=197)
- 3-4 elements: 69 x (35.0 %)
- 5-6 elements: 75 x (38.1 %)
- 7-8 elements: 36 x (18.3 %)

The majority of the institutions take some measures to reduce the non-starter and drop-out rates. The 'mailing of standardised letters of encouragement' is the most frequently taken measure (see Table 58). Audio tapes are very seldom used for this purpose.

Table 58: Measures to reduce the non-starter and drop-out rates (Q35):

	f	%
- mailing of pre-produced (standardised) letters of encouragement or reminders	112	33.9
- mailing of individualised letters.....	93	28.2
- mailing of pre-produced (standardised) encouraging audio tapes.....	5	1.5
- mailing of individualised audio tapes.....	2	1.0
- phone calls to learners.....	78	23.6
- visit to learners by people appointed by the institution.....	27	8.2
- other.....	13	3.9

(% for N=330 nominations; 23 x "no answer" for the question as a whole)

The number of measures taken by an institution varies between 0 and 7. The distribution of the number of measures per institution:

- 0 measure: 36 x (18.3 % for N=197)
- 1 measure: 61 x (31.0 %)
- 2 measures: 54 x (27.4 %)
- 3 measures: 28 x (14.2 %)
- 4 or more : 18 x (9.1 %)

3.5 Two-way communication: tutoring, counselling and assessment/"58"

The tutoring/counselling service of the majority of institutions is organised in such a way that the learner has to contact different tutors if she/he is enrolled for several courses; only at a few institutions a learner seems to be assigned one central tutor for all her/his courses (with regard to this problem see Rekkedal 1985).

Table 60: Tutors'/counsellors' responsibility if a learner has enrolled for several courses (Q36)

- one tutor assigned to learner:.....	25
- different tutors for different courses of a learner:.....	123
- partly the same tutor for different courses, partly different tutors for different courses:.....	13

(N=161; 36 x "no answer")

In similar ways at many institutions students have to contact different tutors/counsellors for different problems.

Table 61: Responsibility of the tutors/counsellors for different problem areas (Q37)

- common for all problems of a learner:.....	72
- different counsellors for different problems:.....	82
- partly common, partly different:.....	6

(N=160; 37 x "no answer")

- Encouraging of study groups (Q27):

About two thirds of the institutions encourage their learners to form study groups or self-help groups (Q27: 124 x "yes", 64 x "no"; 9 x "no answer").

3.5.2 Assessment, exams

Almost all institutions use some form of continuous assessment (Q38: 183 x "yes", 9 x "no", and 5 x "no answer"); 'written assignments' and to a lesser degree 'written intermediary exams' are mentioned very often.

3.5 Two-way communication: tutoring, counselling and assessment/"59"

Table 62: Type of continuous assessment (Q38)

	yes	no	no answer
- written assignments:.....	168	16	13
- written intermediary exams:.....	106	77	14
- oral intermediary exams:.....	34	149	14
- others:.....	19	164	14

'Assessment of learners' performance' and 'support of learner' are equally often mentioned purposes of the assignments.

Table 63: Main purpose of assignments (Q39):

- assessment of learner performance (mainly exam function)	52
- learner support.....	51
- partly, partly / both.....	84

(N=187; 10 x "no answer")

The great majority of the institutions require students to take final courses examinations (Q40: 169 x "yes", 25 x "no", and 3 x "no answer"). The examinations are in most cases written.

Table 64: Type of final course examinations for courses (Q40):

	yes	no	no answer
- written exams:.....	144	23	30
- oral exams:.....	22	145	30
- written and oral exams:.....	44	123	30
- others:.....	17	149	31

In more than half of the institutions the acquisition of course certificates and final marks depend both on the marks obtained in the final examination as well as on the marks awarded for assignments.

3.5 Two-way communication: tutoring, counselling and assessment/"60"

Table 65: Acquisition of course certificate and final marks for courses depending (Q41):

	yes	no	no answer
- exclusively on the number of points obtained or the marks acquired in assignments:.....	44	133	20
- on the marks obtained in the final examination as well as on the marks awarded for assignments:.....	119	58	20
- exclusively on the student's achievements in a final examination:.....	49	128	20
- other:.....	17	160	20

An investigation by Bååth (1980) has pointed to the importance of the regularity and frequency of assignments for the learners' success. About two thirds of the institutions responding to Q42 report having assignments in every course unit.

Table 66: Number of course units containing assignments (Q42):

assignments in:	f	%
- less than half of all course units:.....	19	13.0
- approx. half of all course units:.....	17	11.6
- more than half of all course units:.....	16	11.0
- every course unit:.....	94	64.4

(% for N=146; 51 "no answer")

About two thirds of the institutions allow the learners to submit their assignments whenever it suits them (Q43: 116 x "yes", 66 x "no", and 15 x "no answer").

The average turn-around time for correction of assignments (i.e. the time lag from the day a student's assignment arrives until it is returned with the tutor's corrections and comments: Q44) varies considerably between institutions; about one half of the institutions needs 10 or more days; a turn-around time of 14 days or less is kept by 71% of the institutions.

Table 67: Average turn-around time for correction of assignments (Q44):

median: between 9 and 10 days first quartile:...≈ 5 third quartile:...≈15 mean:.....14.4 range: from 1 to 300 days
--

23 x "no answer"

Predominant types/formats of items (Q45) are 'short open-ended questions', 'short essay on a set subject', and 'multiple choice'-items. The type of items preferred depends to some degree on the subject area; types used frequently for a certain subject area are:

- for (1) education, the humanities, music and the arts: short essay (100 x), short open-ended questions (91 x), and multiple choice (70 x) (Total of nominations for this subject area: 459)
- for (2) social sciences and law: 'short essay' (70 x), 'short open-ended questions' (58 x), 'longer paper on a set subject' (54 x), and 'multiple choice' (50 x) (Total of nominations for this subject area: 305)
- for (3) economics: 'short open-ended questions' (62 x), 'short essay' (56 x), and 'multiple choice' (52 x) (Total of nominations for this subject area: 264)
- for (4) agriculture...: 'short open-ended questions' (21 x), 'multiple choice' (20 x), and 'short essay' (17 x) (Total of nominations for this subject area: 90)
- for (5) mathematics, sciences, and engineering: 'short open-ended questions' (63 x), 'multiple choice' (60 x), 'questions to be filled-in on forms prescribed - e.g. numerical answers' (50 x), and 'short essay' (44 x) (Total of nominations for this subject area: 260)
- for (6) medicine and medical professions: 'multiple choice' (19 x), 'short open-ended questions' (18 x), and 'short essay' (15 x) (Total of nominations for this subject area: 85)

3.5 Two-way communication: tutoring, counselling and assessment/"62"

Table 68: Types/formats of items/tasks used in the assignments for the different subject areas (Q45):

Subject areas:

- (1) education, the humanities, music and the arts, languages
- (2) social sciences and law
- (3) economics
- (4) agricultural sciences, agricultural and sylvicultural professions
- (5) mathematics, sciences and engineering
- (6) medicine and medical jobs and professions
- (7) others

Subject areas:

<u>Type of task/item:</u>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Sum
short open-ended questions	91	58	62	21	63	18	32	345
multiple choice	70	50	52	20	60	19	29	300
questions to be filled-in on forms prescribed (e.g. numerical answers)	41	30	33	12	50	10	19	195
short essay on a set subject	100	70	56	17	44	15	30	332
longer paper on a set subject	71	54	34	08	05	11	19	202
longer paper on a self chosen subject	38	27	12	05	11	06	08	107
sample of student's work/workpieces	40	07	10	05	20	04	15	101
others	08	09	05	02	07	02	02	035
Sum	459	305	264	090	260	085	154	1617

(N=184; 13 x "no answer" for the question as a whole)

The answers to the longer version of the questionnaire gives a somewhat more detailed picture; there the subjects areas are more differentiated (Question No. 69 in the long version: L69): Table 69a contains the frequency of mentioning of each type of item; the data - differentiated for each subject area - are in Table 69b.

3.5 Two-way communication: tutoring, counselling and assessment/"63"

Table 69a: Type/format of items/tasks of assignments (L69):

f : frequency of mentioning
% : percentage related to the total of nominations (N=1448)

type	f	%
short open-ended questions.....	321	22.2
multiple choice	262	18.1
questions to be filled-in on forms prescribed	153	10.6
short essay on a set subject.....	308	21.3
longer paper on a set subject.....	209	14.4
longer paper on a self chosen subject.....	93	6.4
samples of student`s workpieces.....	84	5.8
others.....	18	1.2

Type of items used frequently per subject area (SA):
(in brackets: frequency of mentioning - cf. Table 69b)

- SA 1: Education, teacher trainings : `short essay` (39), `short open-ended questions` (31)", `longer paper on a set subject` (28), and `multiple choice` (23) (total number of nominations for this subject area: 162)
- SA 2: Humanities: `short essay` (35), `short open-ended questions` (25), and `longer paper on a set subject` (25) (total number of nominations for this subject area: 137)
- SA 3: Languages, linguistics: `short essay` (43), `short open-ended questions` (40)", `multiple choice` (28), and `longer paper on a set subject` (20) (total number of nominations for this subject area: 164)
- SA 4: Law and legal professions : `short essay` (24), `longer paper on a set subject` (20), and `short open-ended questions` (19) (total number of nominations for this subject area: 92)
- SA 5: Economics: `short open-ended questions` (44), `short essay` and `multiple choice` (36 each) (total number of nominations for this subject area: 175)
- SA 6: Agriculture: `short open-ended questions` (12), `multiple choice` (11), and `short essay` (9) (total number of nominations for this subject area: 50)
- SA 7: Engineering and technical professions: `short open-ended questions` (25), `multiple choice` (21), `short essay` (18); `questions to be filled-in`, `longer paper on a set subject`, and `workpieces` (11 each) (total number of nominations for this subject area: 104)
- SA 8: Sciences : `short open-ended questions` (31), `multiple choice` (28), `short essay` (21); `questions to be filled-in` and `longer paper on a set subject` (15 each) (total number of nominations for this subject area: 124)

3.5 Two-way communication: tutoring, counselling and assessment/"64"

- SA 9: Mathematics: 'short open-ended questions' (27), 'multiple choice' (26), 'questions to be filled-in' (21), and 'short essay' (14) (total number of nominations for this subject area: 109)
- SA 10: Social sciences : 'short essay' (43), 'short open-ended questions' (34), 'longer paper on a set subject' (34), and 'multiple choice' (31) (total number of nominations for this subject area: 180)
- SA 11: Medicine, medical jobs: 'multiple choice' (13), 'short open-ended questions' (13), and 'short essay' (10) (total number of nominations for this subject area: 61).

3.5 Two-way communication: tutoring, counselling and assessment/"65"

Table 69b: Type of items used for each subject area (L69):

Subject area:												
(1)	education, teacher training											
(2)	humanities, music and arts											
(3)	languages, linguistics											
(4)	law and legal professions											
(5)	economics											
(6)	agriculture, silviculture, forestry											
(7)	engineering and technical professions											
(8)	sciences											
(9)	mathematics											
(10)	social sciences											
(11)	medicine and medical jobs											
(12)	others											
Subject areas:												
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	Sum
short open-ended questions												
31	25	40	19	44	12	25	31	27	34	13	20	321
multiple choice												
23	16	28	13	36	11	21	28	26	31	13	16	262
questions to be filled-in												
15	8	18	06	21	5	11	15	21	15	7	11	153
short essay on a set subject												
39	35	43	24	36	9	18	21	14	43	10	16	308
longer paper on a set subject												
28	25	20	20	22	6	11	15	9	34	7	12	209
longer paper on self-chosen subject												
12	12	9	5	7	4	6	6	4	17	6	5	93
workpieces												
12	16	4	2	6	3	11	7	7	3	4	9	84
others												
2	0	2	3	3	0	1	1	1	3	1	1	18
Sum												
162	137	164	92	175	50	104	124	109	180	61	90	1448

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Assignments submitted are not only corrected but also commented by the tutors at the great majority of institutions (Q46).

Table 70: Tutor's comments on the assignments (Q46):

	<u>f</u>	<u>%</u>
- correction only:.....	12	6.5
- correction and additional comments:.....	165	89.2
- partly correction only, partly correction and additional comments:.....	8	4.3

% related to N=185;
12 x "no answer" for the question as a whole

The comments on assignments by tutors are rather short (Q47):

Table 71: Extent of tutor's comments on assignments (Q47):

	<u>f</u>	<u>%</u>
- about one page of the size of this report:.....	21	13.0
- about 1/2 page of the size of this report:.....	68	42.0
- less than half a page of the size of this report:.....	67	41.4
- more than a page of the size of this report:.....	6	3.7

% related to N=162; 35 x "no answer"

Comments of tutors on assignments are usually individualised (Q48):

Table 72: (Non-) individualisation of tutor's comments (Q48):

	<u>f</u>	<u>%</u>
- individualised comments.....	135	75.8
- non-individualised model answers.....	19	10.7
- partly individualised, partly non-individualised..	24	13.5

(% related to N=178; 19 x "no answer")

The person correcting the assignments is also responsible for answering students' questions at the majority of institutions (Q49):

Table 73: Tutors' responsibility for: (Q49)

	yes	no
- answering students' questions.....	164	14
- writing letters of encouragement or reminders....	66	112
- other types of counselling.....	72	106

(N=178; 19 x "no answer")

The correctors/tutors are paid on a fee basis per corrected assignment in about half of the institutions (Q50):

Table 74: Payment of correctors/tutors (Q50):

	yes	no
- on a fee basis, per corrected assignment.....	87	90
- for all assignments in a course on a fee basis...	25	152
- a salary for employment		
- part time.....	64	113
- full time.....	53	124

(N=177; 20 x "no answer")

Q51 refers to the use of a computer for the correction and commenting on assignments - separately for type of correction and subject area; the data on this question cannot be interpreted; most respondents have not differentiated between the subjects areas and/or the types of correction/commenting.

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3.5.3 'Learner Friendliness' or degree of learner support

3.5.3.1 Introduction: the concept of learner friendliness/amount of support for learners

The concept is related to M. Delling's term 'supporting organisation' (Delling 1971) for the distance-education institution and means the degree to which the institution gives support to the learners by means of tutoring and counselling and to which it is adaptive to students' needs and wishes (Holmberg & Schuemer 1985).

The learner-friendliness concept is based on the assumption that two-way communication between the learner and the institution is a central constitutive element of distance teaching beside the teaching material. This communication may have different forms and may be brought about by different methods - e.g. submission of assignments to be corrected and/or commented on by the institution, tutoring/counselling, face-to-face or on the telephone etc. -; but its aim should be to enable the learners to manage their studies and to overcome the difficulties in distance education. The communication should give the learner the feeling of not being alone. As different learners have different needs and - in addition - may react to the communication offers (media/methods) of the institutions in different ways a 'supporting organisation' should not rely on one medium/method only.

The concept is heuristic; it is hypothesised that the learners experience the distance-teaching institution as more friendly and that the institution can give more help to students

- if two-way communication is considered a constitutive element of the services offered by the institution and
- the more components the communication includes (e.g. correction of/ commenting on the assignments submitted by the learners; mediated or face-to-face contacts between tutor and learner; supplementary face-to-face sessions)
- if the institution offers a counselling and tutoring service and this service uses different media/methods (e.g. written correspondence and/or telephone service and/or face to face contacts) and if this service is available also after usual office hours or on weekends
- if the institution encourages learners to contact tutors when they feel they need help
- if the institution contacts students who do not stay in touch (and the initiative to contact the institution is not left with the learners)
- if the institution takes steps to reduce non-starter and drop-out rates (e.g. mailing of standardised or individualised letters of encouragement or reminders if students have not been in touch for a certain time and/or phone calls to learners)
- if the main purpose of the assignments is learner support (and not merely assessment of learner performance)
- if the learners may submit their assignments for correction and comment whenever it suits them
- if the turn-around time for tutors' corrections and comments is not too long (e.g. does not exceed 9 days)

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- if the assignments submitted are not only corrected, but also commented on and if the tutor's comment is not too short
- if the tutors/correctors receive a salary (and are not paid on a fee basis per corrected assignment) and, therefore, can spend as much time on each learner and her/his assignments as is necessary

Obviously the list above is not complete (other elements - not mentioned - may be of relevance): furthermore not the mere existence of a two-way communication element or the mere quantity of such elements but the quality of the communication is decisive. But it is difficult - maybe impossible - to assess/measure quality by the crude method of a written survey/questionnaire. Therefore the operational definition above is only a rough indicator.

The questionnaire contains several items related to the topics mentioned above.

Each item can be transformed in such a way that it is scored one ("1") if it points in the direction of 'learner support' and is scored zero ("0") otherwise¹⁾. Then the 'learner support'-score (LF) can be taken simply as the sum of the 0/1-values over the items/conditions and represents the number of measures taken by the institution to support learners. The conditions and the corresponding items are summarised in Table 75. (The transformed items in Table 75 are designated by a preceding "T". "S" denotes a transformed item based on a sum score.)

Table 75: Definition of the LF-Score (LF: learner friendliness or degree of learner support)

The LF-score increases,

- if two-way communication is considered a constitutive element of the services offered by the institution (Q29) and if the two-way communication includes two or more of the following components (S29T2)
 - correction of assignments (T29a)
 - comments on the assignments (T29a)
 - regular contacts (mediated or face-to-face) between tutor and learner (T29c)
 - face-to-face sessions (T29d)
 - answering of learners' requests (T29e)
 - contacts with learners initiated by the institution (T29f)

Continued

1) The if-then-else structure implies that 'non response' is scored as zero. The number of 'non-responses' per institution may be used for 'correction' (e.g. by means of partial correlation). If this number exceeds a certain limit to be specified the LF-score should not be interpreted.

Table 75 - continued

- if the institution offers a counselling and tutoring service (Q30) and this service includes at least two media/methods (S30T2):
 - written correspondence (T30a)
 - telephone service (T30b)
 - audio tapes (T30c)
 - face-to-face contacts (T30d)
- if the service is available also after usual office hours or at week-ends (T31)
- if the institution encourages learners to contact tutors when they feel they need help (T33)
- if the institution contacts learners from whom nothing is heard (T34)
- if the institution takes measures to reduce non-starter or drop-out rates - including at least two of the following measures (S35T2):
 - mailing standardised letters of encouragement or reminders if students do not let heard from them for a certain time (T35a)
 - mailing individual letters (T35b)
 - mailing standardised or individualised encouraging audio tapes (T35c, d)
 - phone calls to learners T35e)
 - visits to learners by people appointed by the institution (T35f)
- if the main purpose of the assignments is learner support (and not merely assessment of learner performance - T39)
- if the learners may submit their assignments for correction and comment whenever it suits them (T43)
- if the turn-around time for tutor's corrections and comments does not exceed 9 days (T44; the median of turn-around time lies between 9 and 10 days.)
- if the assignments submitted are not only corrected, but also commented on (T46)
- if the tutor's comment has the length of at least half a page of the size of this report (T47)
- if the tutor's comment is individualised (T48)
- if the tutors/correctors receive a salary (and are not paid on a fee basis per corrected assignment (T50)

The LF-composite score is defined as²⁾:

$$LF = S29T2 + T30 + S30T2 + T31 + T33 + T34 + S35T2 + T39 + T43 + T44 + T46 + T47 + T48 + T50$$

2) Each of the element sums for Q29 (Q29a--Q29f), Q30 (Q30a--Q30d) and for Q35 (Q35a--Q35f) have been dichotomised; otherwise the sums are dependent on the number of elements (i.e.: the sums as components of LF would be weighted implicitly by the number of their elements; questions with only two possible answers would get a lower weight than questions with several possible responses).

3.5 Two-way communication: tutoring, counselling, and assessment/"71"

Preliminary analyses of the relationships between the conditions show low or moderate correlations between several of them (see section 3.5.3.2), but principal component or factor analyses of the items show that the structure of the variables contains more than one component or factor; so the homogeneity of the LF-score is rather low (see Table 76). Also a scalogram analysis according to Guttman yields a rather low coefficient of reproducibility (.76).

[Elimination of 'poor' items or splitting the LF-score into subscores may result in higher coefficients. A cluster analysis of the LF-items suggests two or three subscores. but further scale analyses are needed; they will be reported in a later paper.]

Table 76: Item statistics for the LF-composite score

item/condition	M	S	adjusted ³⁾		
			r_{it}	r_{it}	a_{it} ⁴⁾
S29T2	.95	.21	.26	.18	.27
T30	.89	.31	.40	.29	.60
S30T2	.80	.40	.51	.38	.70
T31	.32	.47	.36	.18	.38
T33	.88	.33	.41	.29	.58
T34	.61	.49	.43	.24	.56
S35T2	.50	.50	.56	.40	.38
T39	.69	.47	.38	.20	.29
T43	.59	.49	.33	.14	.15
T44	.39	.49	.40	.22	.25
T46	.88	.33	.48	.36	.43
T47	.48	.50	.39	.20	.31
T48	.69	.47	.49	.32	.42
T50	.48	.50	.34	.15	.28

$$\text{Cronbach's alpha} = \{n/(n-1)\} \{1 - (\sum s_i^2 / s_t^2)\} = .61$$

where n: number of items

s_i^2 : variance of item i

s_t^2 : variance of the composite score

r_{tt} : reliability (homogeneity) of the composite score
 - estimated by the Spearman-Brown formula from the mean item-intercorrelation (mean by using z')

$$r_{tt} = .63$$

Coefficient of reproducibility: .76

Distribution of LF:

range: 2 - 14

median \approx 9; $Q_1 \approx$ 7; $Q_3 \approx$ 11

mean: 9.14; standard dev.: 2.46

3) adjusted r_{it} : item-score correlation adjusted for the part-whole effect by excluding item i from the sum before correlating

4) coefficients ("loadings") for the first principal component

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An example of an institution with a high LF-score is the Telford College in UK (LF=14); the British Open University obtains a somewhat lower score (LF=11). The score of the German FernUniversität is rather low (LF=7). Very low scores are found at the Turkish Anadolu Üniversitesi (LF=3) and the Indonesian Universitas Terbuka (LF=2).

3.5.3.2 Some relationships between LF-variables⁵⁾

The relationships are not presented here in detail (see Table A_2 in Appendix 3) but some of the correlations between the LF-components are described below (some other variables besides the 0/1-items of the LF-score are considered):

- The greater the number of elements of two-way communication (Sum for Q29: S29)
 - the greater the number of media in tutoring/counselling (Sum for Q30: written correspondence, telephone, audio tape, face-to face contact; S30): $r=.39$
 - the greater the tendency to encourage learners to contact their tutors when they feel they need help (T33: $r_{pbis}=.20$)
 - the greater the number of measures taken by the institution to reduce the non-starter and drop-out rates (Sum for Q35: S35): $r=.30$; and especially:
 - the greater the tendency to send individualised letters (T35b: $r_{pbis}=.29$) and use phone calls to learners (T35e: $r_{pbis}=.33$)
 - the greater the tendency to use assignments for learner support (and not merely for assessment) (T39: $r_{pbis}=.26$).
- The number of elements of two-way communication (Sum for Q29: S29) tends to be greater if the institution pays its correctors/tutors a salary (T50: $r_{pbis}=.27$) and does not pay them on a fee basis per corrected assignment
- If the two-way communication includes correction of assignments (T29a) then it also tends to include commenting on assignments (T29b: $\phi=.74$).
- Institutions which correct assignments (T29a) or comment on them (T29b) tend to answer learners' queries and requests (T29e; $\phi=.37$ for T29a; $\phi=.46$ for T29b).
- If the two-way communication includes commenting on assignments (T29b) then the tendency is higher to describe 'learner support' as the main purpose of assignments (T39: $\phi=.28$).

5) We tried to study the possible effects of the sample heterogeneity with regard to the educational level of the institutions on the correlations by computing the coefficients only for those 72 institutions which can be classified as universities. The coefficients for this subsample of institutions have the same tendency as the coefficients on the basis of the total sample (N=197). Furthermore the correlations may be biased by the scoring of "no answer" to an LF-item as zero; this possible effect was checked by computing the coefficients only for those 150 institutions where the number of missing values is not greater than 4. These correlations also have the same tendency as those computed for the total sample.

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- If the two-way communication includes regular contacts between tutor and learner (T29c2) or organised face-to-face sessions (T29d) then it is more likely that the counselling service can be contacted also beyond usual office hours (T31: $\phi=.36$ for T29c2 and $\phi=.43$ for T29d).
- Institutions offering a tutoring/counselling service (T30) tend to encourage their learners to contact tutors when they feel they need help (T33: $\phi=.47$).
- If the tutoring service includes written correspondence (T30a) then telephone service tends to be offered too (T30b: $\phi=.49$).
- Institutions which take measures to reduce the non-starter and drop-out rate (T35a,b) tend to contact students who do not stay in touch (T34: $\phi=.31$ for T35a "mailing standardised letters of encouragement" and $\phi=.32$ for T35b "mailing individualised letters").
- If the tutors get a salary rather than being paid on a fee basis (T50) then phone calls to learners (T35e: $\phi=.27$) are more likely and the tendency to send standardised letters of encouragement is lower (T35a: $\phi=-.26$).
- The number of media used by the counselling/tutoring service (Sum of Q30: T30a: 'written correspondence'; T30b: 'telephone service'; T30c: 'audio tapes'; and T30d: 'face-to-face contact'; S30) tends to be higher
 - if the counselling/tutoring service can be contacted also after usual office hours and on week-ends (T31: $r_{pbis}=.36$).
 - if the institutions encourage the learners to contact their tutors when they feel they need help (T33: $r_{pbis}=.40$).
 - if the institutions write individualised letters (T35b: $r_{pbis}=.22$) and use phone calls to learners (T35e: $r_{pbis}=.26$).
 - if a learner is assigned one personal tutor for all her/his courses (T36: $r_{pbis}=.22$) or for all problem areas (T37: $r_{pbis}=.25$).
- If the counselling/tutoring service can be contacted also after usual office hours and on week-ends (T31):
 - the number of elements of two-way communication (Sum for Q29: S29) tends to be higher ($r_{pbis}=.41$).
 - the number of measures taken by the institution to reduce the non-starter or drop-out rate (Sum for Q35: S35) tends to be higher ($r_{pbis}=.21$).
- If the institution encourages learners to contact their tutors when they feel they need help (T33) the number of measures taken by the institution to reduce the non-starter or drop-out rate (Sum for Q35: S35) tends to be higher ($r_{pbis}=.20$).
- If the institution contacts learners who do not stay in touch (T34) the number of measures taken by the institution to reduce the non-starter or drop-out rate (Sum for Q35: S35) tends to be higher ($r_{pbis}=.39$).
- The greater the number of measures taken by the institution to reduce the non-starter or drop-out rate (Sum for Q35: S35) the greater the number of media in tutoring/counselling (Sum for Q30: written correspondence, telephone, audio tape, face-to-face contact): $r=.31$
- If the institution designates 'learner support' as the main purpose of assignments (T39)

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- the number of elements of two-way communication (Sum for Q29: S29) tends to be higher ($r_{pbis}=.26$).
- the tendency not only to correct but also to comment on assignments is greater (T46: $\phi=.28$).
- the tendency to give individualised comments (and not only non-individualised model answers) is greater (T48: $\phi=.20$).

Some further correlations between the LF-score and some other variables not included in Table 76 are summarised in Table 77.

Table 77: Correlations between LF-score and some other items
(not included in Table 76)

	LF
Q22b curriculum is fixed, but it contains alternatives....	.23
Q27 encouragement of self help groups .....	.11
T29 two-way comm. as a constitutive element.....	.18
T29a correction of assignments.....	.40
T29b commenting on assignments.....	.47
T29c regular contact between learner and tutor:	
T29c1 mediated.....	.22
T29c2 direct/face-to-face.....	.17
T29d organised face-to-face sessions.....	.14
T29e answering of learners' queries.....	.31
T29f contacts with learners initiated by the institution	.23
S29 number of elements in two-way communication.....	.45
S29N like S29 (without T29g).....	.45
S29T2 0/1 score; "1": if S29N \geq 2; else "0".....	.26
T30 offering of a counselling/tutoring service.....	.40
<u>Medium of service:</u>	
T30a written correspondence.....	.47
T30a1 standardised letters.....	.18
T30a2 individualised letters.....	.35
T30a3 use of text modules.....	.06
S30a (Sum of T30a1/2/3).....	.52
T30b telephone service.....	.52
T30c audio tapes.....	.16
T30d face-to-face contact.....	.25
S30 number of media for counselling (Sum of T30a/b/c/d)..	.53
T31 counselling service after usual office hours or on week-ends.....	.36
T33 encouraging of learners to contact their tutors.....	.41
T34 contacting of learners who do not let hear from them	.43

- Continued -

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Table 77: - Continued -

S33_34 (sum of T33 and T34).....	.57
<u>Measures to reduce non-starter/drop-out rates (Q35):</u>	
T35a mailing of standardised letters of encouragement....	.27
T35b mailing of individualised letters.....	.46
T35c mailing of standardised audio tapes	.08
T35d mailing of individualised audio tapes.....	.14
T35e phone calls to learners .....	.49
T35f visits to learners .....	.24
S35 number of measures taken (Sum of T35a/b/c/d/e/f/g)...	.55
S35N like S35 but without T35g .....	.58
S35T2 0/1-score; "1": if S35N \geq 2; else "0"56
T36 common tutor for all courses18
T37 common tutor for all problems20

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3.5.3.3 Relation of the LF-score to success and non-starter rates

There is no external criterion for the validity of the LF-Score; but if the concept has any validity at all there should be some correlations between LF (and its components) and the success rate and/or the non-starter rate. Unfortunately there are only two very rough indicators for the latter two variables available: Q53 (success rate for the three courses with the highest number of enrolments) and Q54 (the analogous non-starter rate) - cf. section 3.2.10

The correlations for the LF-score and its components with Q53 and Q54 are summarised in Table 78 and those for some additional variables in Table 79; Table 80 contains corresponding crosstabulations for some of the relationships.

The success rate (Q53: average percentage for the three courses with the highest number of enrolments) tends to be higher

- the higher the LF-score is (LF: $r=.26$; $n=139$); the institutions with higher LF-scores ($LF \geq 10$) tend to have the higher success rates ($Q53 \geq 67$) - cf. Table 78 and 80
- if the institution uses at least two media/methods for counselling/tutoring (S30T2: $r_{pbis}=.23$; $n=139$)
- if the counselling service can be contacted by telephone also on week-ends (Q31c1: $r=.22$; $n=124$)
- if the institution tries to reduce non-starter and drop-out rate by sending individualised letters (T35b: $r=.39$; $n=139$) or by phone calls to learners (T35e: $r=.25$; $n=139$)
- if the institution takes at least two measures to reduce the non-starter and drop-out rates (S35T2: $r_{pbis}=.35$; $n=139$)
- if the tutors/correctors get a salary for full-time employment (Q50c2: $r=.19$; $n=139$) - see Table 79.
- if the institution encourages the formation of self-help groups (Q27: $r=.20$; $n=135$) - see Table 79.

The non-starter rate (Q54: average percentage for the three courses with the highest number of enrolments) tends to be lower

- the higher the LF-score (LF: $r=-.16$; $n=121$)
- if the tutoring/counselling service includes individualised letters (Q30a2: $r=-.30$; $n=96$)
- if the counselling service can be contacted by telephone on week-ends, too (Q31c1: $r=-.26$; $n=109$)
- if the institution tries to reduce non-starter and drop-out rate by sending individualised letters (T35b: $r=-.30$; $n=121$)
- if the turn-around time for correction of assignments does not exceed 9 days (T44: $r=-.17$; $n=121$)
- if the tutors/correctors get a salary for full-time employment (Q50c2: $r=-.25$; $n=110$) - see Table 79.
- if the institution encourages the formation of self-help groups (Q27: $r=-.17$; $n=114$) - see Table 79.

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Table 78: Correlation between the LF-score (and its components) and the success rate (Q53) and the non-starter-rate (Q54)

N for Q53: 139; N for Q54: 121

	Q53	Q54
S29T2 at least 2 elements of two-way communication . . . . .	.06	.06
T30 offering of a counselling/tutoring service . . . . .	.04	.06
S30T2 at least two media for counselling . . . . .	.23	.03
T31 counselling service after usual office hours or on week-ends . . . . .	.08	-.10
T33 encouraging learners to contact their tutors . . . . .	.07	.01
T34 contacting learners who do not stay in touch . . . . .	.14	-.10
S35T2 at least 2 measures to reduce non-starter/ drop-out rates (Q35) . . . . .	.35	-.24
T39 main purpose of assignments: learner support	-.13	.13
T43 submission of assignments whenever it suits the learner	-.02	.08
T44 average turn-around time for correction: ≤ 9 days .09		-.17
T46 also commenting on assignments . . . . .	.08	-.13
T47a length of comments: half a page or more . . . . .	.07	-.08
T48 individualisation of comments . . . . .	.11	-.03
T50 payment of correctors/tutors: salary (full-time or part-time) . . . . .	.19	-.16
LF-score . . . . .	.26	-.16

These coefficients are rather low; but they give some support to the assumption that 'learner friendliness' or some of its components have some effect on the success rate and/or the non-starter rate. This seems to be true especially for 'individualised letters' (T35b; Q31a2) and 'phone calls to learners' (T35e).

The tendency of these results agrees with the findings of step 1 of this study (see Holmberg & Schuemer 1985, section 4.2.2.1). There, too, the institutions with higher scores in 'learner friendliness' had the higher success rates, but the correlation was weak (The LF-scale was constructed in the same way but consisted of fewer items).

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Table 79: Correlations for some additional variables with the success rate (Q53) and the non-starter rate (Q54)			
n: number of pairs of observations per correlation			
		Q53	Q54
Q27 encouragement of the formation of self-help groups		.20	-.17
	n=	133	116
Q30a2 individualised letters for counselling/ tutoring .....		.15	-.30
	n=	107	96
Q31c1 counselling/tutoring service can be contacted on weekend by telephone		.22	-.25
	n=	124	109
Q50c1 tutors get a salary for part-time employment		.17	-.02
	n=	127	110
Q50c2 tutors get a salary for full-time employment		.16	-.25
	n=	127	110
	n for the following correlations:	n= 139	121
Measures to reduce non-starter/drop-out rates (Q35):			
T35a mailing standardised letters of encouragement....		-.02	.02
T35b mailing individualised letters.....		.39	-.30
T35c mailing standardised audio tapes		-.01	.15
T35d mailing individualised audio tapes		-.01	.10
T35e phone calls to learners .....		.25	-.14
T35f visits to learners .....		.12	-.01
S35 number of measures taken (Sum of T35a/b/c/d/e/f/g)		.27	-.13
S35N like S35 but without T35g.....		.29	-.14
T36 personal tutor assigned to learner for all courses		.22	-.20
T37a personal tutor assigned to learner for all problems		.08	-.19

The correlations of T36 and T37 with Q54 are in accordance with the Rekkedal's results (1985) that a personal tutor/counsellor for several courses contributes to reducing the drop-out rate.

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Table 80: Crosstabulation: success and non-starter rate (Q53, Q54) vs. selected variables

Q53 and Q54 dichotomised near median:

Q53- : Q53 ≤ 67 % Q53+ : Q53 > 67 %
 Q54- : Q54 ≤ 12 % Q54+ : Q54 > 12 %

		Q53-	Q53+	Q54-	Q54+
LF ≤ 9	f	42	30	27	35
	%	(58.3)	(41.7)	(43.6)	(56.5)
LF > 10	f	27	40	35	24
	%	(40.3)	(59.7)	(59.3)	(40.7)
S30T2 ≤ 1	f	17	5	11	9
	%	(77.3)	(22.8)	(55.0)	(45.0)
S30T2 ≥ 2	f	52	65	51	50
	%	(44.4)	(55.6)	(50.5)	(49.5)
S35T2 ≤ 1	f	43	24	22	33
	%	(64.2)	(35.8)	(40.0)	(60.0)
S35T2 ≥ 2	f	26	46	40	26
	%	(35.1)	(63.9)	(60.6)	(39.4)
T35b=0	f	48	26	26	38
	%	(64.9)	(35.1)	(40.6)	(59.4)
T35b=1	f	21	44	36	21
	%	(32.3)	(67.7)	(63.2)	(36.8)
T35e=0	f	46	34	31	38
	%	(57.5)	(42.5)	(44.9)	(55.1)
T35e=1	f	23	36	31	21
	%	(39.0)	(61.0)	(59.6)	(40.4)

3.5.4 Summary for tutoring/counselling and assessment

- 90% of the institutions (176 of 194; 3 x "no answer") offer a counselling and tutoring service (Q30). It includes telephone service and written correspondence at the great majority of institutions (145 x and 151 x, resp.; see Tab. 1); but also opportunities for counselling by face-to-face contacts are offered by more than an half of the institutions (116 x); tutoring/ counselling by audio tapes is offered less frequently (60 x).
- The written correspondence for tutoring contains individualised letters (127); standardised letters or text modules are used less frequently (71 and 32 x , resp.).
- The tutoring/counselling service can be contacted not only on weekdays during the usual office hours but beyond these hours, too, in some institutions (see Tab. 2).
- Almost all institutions (192 out of 197) consider two-way communication as a constitutive element of their services (Q29). In this context the correction of and commenting on assignments and the answering of learners's queries are mentioned very often. The great majority of the institutions (180 from 197) use three or more of these elements.
- The majority of the institutions take some measures to reduce the non-starter and drop-out rates. The 'mailing of standardised letters of encouragement' is the measure taken most frequently. Audio tapes are used very rarely for this purpose.
- Most institutions organise their tutoring/counselling service in such a way that the learner has to contact different tutors if he is enrolled for several courses; only at a few institutions is the learner assigned one central tutor for all courses (Q36). Similarly at many institutions learners have to contact different tutors/counsellors for different problems (Q37).
- About two thirds of the institutions encourage their learners to form study groups or self-help groups (Q27).
- Almost all institutions use some form of continuous assessment (Q38); 'written assignments' and to a lesser degree 'written intermediary exams' are mentioned very often.
- 'Assessment of learners' performance' and 'learner support' are assignment purposes mentioned equally often.
- Students have to participate in final course examinations at 85% of the institutions (Q40). The examinations are written in most cases.
- The acquisition of course certificates and the final marks depend on the marks obtained in the final examination as well as on the marks awarded for assignments in more than half of the institutions (Q41).
- About two thirds of the institutions have assignments in every course unit (Q42).
- About two thirds of the institutions allow the learners to submit their assignments whenever it suits them (Q43).

3.5.4 Summary for tutoring/counselling and assessment /"81"

- The average turn-around time for correction of assignments (i.e. the time lag from the day a student's assignment arrives until it is returned with the tutor's corrections and comments: Q44) varies considerably between the institutions; about one half of the institutions need 10 or more days; a turn-around time of 14 days or less is kept by 71% of the institutions (Q44).
- Predominant types/formats of items (Q45) are 'short open-ended questions', 'short essay on a set subject', and 'multiple choice'-items. The type of items preferred depends on the subject area to some degree (Q45).
- Assignments submitted are not only corrected but also commented by the tutors at the great majority (~90%) of the institutions (Q46).
- Tutors' comments on assignments are rather short: about half a page of the size of this report or less ((Q47: 135 x) and usually individualised (Q48: 135 x).
- The person correcting the assignments is also responsible for answering students' questions at the majority of institutions (Q49):
- The correctors/tutors are paid on a fee basis per corrected assignment in about one half of the institutions (Q50).
- The 'learner-friendliness' concept tries to integrate some aspects of tutoring/counselling and assessment of learner's performance.

A composite score - based on this concept - is defined to measure the degree of learner support by the institution or the 'learner friendliness' (LF-score).

This score and some of its components show some relationships to the success rate (Q53) and the non-starter rate (Q54):

If the LF-score is low ($LF \leq 9$) then the success rates ($Q53 \geq 67$) are lower than if the LF-score is high ($LF \geq 10$).

Some additional correlations for items related to the 'learner-friendliness'-concept:

- The success rate (Q53: average percentage for the three courses with the highest number of enrollments) tends to be higher
 - if the institution encourages the formation of self-help groups (Q27)
 - if the counselling service can be contacted by telephone also on week-ends (Q31c1)
 - if the institution tries to reduce non-starter and drop-out rate by sending individualised letters (T35b) or by phone calls to learners (T35e)
 - if the number of measures to reduce the non-starter and drop-out rates is higher (Sum over components of Q35, S35)
 - if the tutors/correctors get a salary for full-time employment (Q50c2)
- The non-starter rate (Q54: average percentage for the three courses with the highest number of enrollments) tends to be lower
 - if the institution encourages the formation of self-help groups (Q27)
 - if the tutoring/counselling service includes individualised letters (Q30a2)
 - if the counselling service can be contacted by telephone on week-ends, too (Q31c1)

3.5.4 Summary for tutoring/counselling and assessment /"82"

- if the institution tries to reduce non-starter and drop-out rate by sending individualised letters (T35b)
- if the turn-around time for correction of assignments does not exceed 9 days (T44)
- if the tutors/correctors get a salary for full-time employment (Q50c2)

These results agree with the findings of an earlier study (Holmberg & Schuemer 1985, section 4.2.2.1).

3.6 Some further relationships

(R. Schuemer & M. Weingartz)

This section deals with the relationships between the composite scores defined in 3.2, 3.3 and 3.5. The following composite scores are considered:

- PI: amount of face-to-face components in distance teaching.
The score is based on Q8 (cf. section 3.2.4) and has a range from 1 to 4:
"1": 'pure distance teaching' (Q8a)
"2": distance teaching with a few of face-to-face elements (Q8b,c)
"3": distance teaching and face-to-face teaching of equal importance (Q8d).
"4": 'face to face teaching with a supplementary distance teaching material' (Q8e)
(Some institutions gave multiple responses to Q8; therefore, the score cannot be defined for all institutions: N=166).
- FI: amount of flexibility or number of options students have with regard to their studies (cf. section 3.2.5). The score is based on Q9 and has a range from 0 to 8.
- LF: 'learner friendliness' (cf. section 3.5.3.1). The score is to assess the degree of learner support. It is based on items/conditions from Q29, Q30, Q31, Q33, Q34, Q35, Q39, Q43, Q44, Q46, Q47, Q48, and Q50 and has a range from 0 to 14.
- IND: Score of independence (cf. section 3.3.4.1). The score is to indicate the extent of support enabling the learner to keep up self-directed study activities, i.e. activities that do not depend on the presence of a teacher. The score has a range from 0 to 7 and is based on items from Q9, Q22/23, Q24/25, Q26, Q28, Q34, and Q47.
- IC: Score of individualized control (cf. 3.3.4.2). The score is to indicate the extent of the control that takes into account and activates learners' previous knowledge, individual characteristics and aims. The score has a range from 0 to 7 and is based on items from Q17, Q29, Q30, Q36, Q46, Q48, and Q49.
- GC: Score of goal-oriented control (cf. 3.3.4.3). The score is to indicate the extent of control exerted on the learner in order for him to reach a fixed aim (degree, diploma) as effectively as possible. The score has a range from 0 to 6 and is based on items from Q27, Q30a, Q33, Q35, Q38, and Q39.

Expectations/hypotheses:

- There should be positive correlations between the flexibility (FI) and the LF-, IND-, or IC-score; on the other hand a negative correlation is expected between the FI-Score and the PI-Score: institutions with higher proportions of face-to-face elements can offer fewer options to their students with regard to time/hours of study.

3.6 Some further relationships/"84"

- A negative correlation is expected between goal-oriented control and independence: It is assumed that goal-oriented control frequently makes use of measures that may lead to a restriction of the individual and therefore in the long run do not really support independence but could actually counteract it.
- No correlation is expected between the amount of face-to-face components in distance teaching (PI-Score) and the LF-, IND-, IC- or GC-scores.
- Positive correlations are expected between 'learner friendliness' (LF), 'independence' (IND), and 'individualized control' (IC).

Table 82 summarizes the correlation coefficients (Since there is item overlapping between the scores - i.e. some items are used for definition of scores in the same or similar way thus producing dependency of measurement and overestimation of the correlation between them - correlation coefficients are given both without and with correction¹⁾)

1) corrected correlations: correlations after eliminating those items from one of the scores correlated which are contained in identically or similar way in the other score; that means for:

- LF/IND: eliminating T34 and T47a from LF
- LF/IC: eliminating S29T2, S30T2, T46 and T48 from LF
- LF/GC: eliminating S30T2, S35T2, T33 and T39 from LF
- LF/FI: eliminating T43 from LF
- IC/GC: eliminating Q30T from IC
- IND/FI: eliminating R9b from IND.

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Table 81: Correlations between some composite scores

- FI: amount of flexibility
- LF: 'learner friendliness'
- IND: Score of independence
- GC: Score of goal-oriented control
- IC: Score of individualized control
- PI: amount of face-to-face components.

	FI	LF	IND	GC	IC
LF	.34 ^a (.27 ^a) [*]				
IND	.45 ^a (.20 ^a)	.62 ^a (.47 ^a)			
GC	.19 ^a	.42 ^a (.33 ^a)	.30 ^a		
IC	.26 ^a	.69 ^a (.52 ^a)	.37 ^a	.29 ^a (.19 ^a)	
PI	-.28 ^a	-.03	-.09	-.12	.03

* In brackets: correlations corrected for item overlapping (see text)

a : $p \leq .01$;

n=197 for correlations between FI, LF, IND, GC und IC

n=166 for correlations of PI with the other scores

The empirical correlations²⁾ agree with the expectations - but there is one exception: contrary to the expectation there is a positive correlation between 'independence' and 'goal-oriented control'.

A factor analysis of the variables (with equamax rotation) shows that their relationships can be described by three factors³⁾ (explaining about 77 % of total variation):

Factor I: high loadings ($\geq .75$) for LF, IND and IC; medium loading (.51) for FI.

Therefore, the factor may be named/designated as 'individualized learner support'

Factor II: high positive loading (.86) for the PI-score (proportion of face-to-face contacts) and medium negative loading (-.68) for 'flexibility' (FI). The factor may be interpreted as 'presence factor'.

- 2) Pearson's r; the tendency of the coefficients does not change by computing Kendall's tau or Spearman's rho instead of Pearson's r. A further check was done by computing partial correlations with the number of missing values partialled out; The tendency of these partial correlations also agrees with the simple r-coefficients.
- 3) Factor scores for these three factors may be used for classifying the institutions by means of clusteranalysis. Such analyses will be described in a forthcoming paper.

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Factor III: high loading (.94) only for 'goal-oriented control'.
The factor may be interpreted as 'general (non-individualized) control factor'.

The negative correlation between flexibility (FI) and amount of face-to-face contacts (PI) can also be shown by considering the means of FI for the four levels of PI (see Table 82): The highest mean of FI is found at PI=1 (pure distance teaching), the lowest for PI=4 (face-to-face teaching with supplementary distance teaching).

Table 82: Means of the flexibility score (FI) - depending on amount of face-to-face contacts (PI):

	PI=1	PI=2	PI=3	PI=4	
(1) pure distance teaching (Q8a)					
(2) distance teaching with a few of face-to-face elements (Q8b,c)					
(3) distance teaching and face-to-face teaching of equal importance (Q8d)					
(4) face to face teaching with a supplementary distance teaching material' (Q8e)					
	3.64	2.94	2.29	1.57	F=4.76 p≤.005
(n)	(39)	(99)	(14)	(14)	df= 3; 162

Relationships between the composite scores and the success rate, the non-starter rate

Table 83 shows the relationships between the composite scores mentioned above on the one hand and the success rate (Q53) and the non-starter rate (Q54) on the other hand.

Table 83: Correlations between the composite scores (FI, LF, IND, GC, IC, PI - see Table 82) and:
- the success rate (Q53)
- the non-starter rate (Q54)

	FI	LF	IND	GC	IC	PI
Q53	.04	.26 ^a	.19 ^b	.07	.24 ^a	.17 ^c
(n)	(139)	(139)	(139)	(139)	(139)	(119)
Q54	.07	-.16 ^c	-.19 ^b	-.01	-.08	-.16
(n)	(121)	(121)	(121)	(121)	(121)	(105)
a: p≤.01	b: p≤.05	c: p≤.10				

The success rates (Q53) are higher with rising 'learner friendliness' (LF), 'score of independence' (IND), and 'individualized control' (IC); the non-starter rates (Q54) are lower with higher scores in 'learner friendliness' or

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'independence'.

Multiple regression/correlations with the scores as predictors and the success rate or the non-starter rate as dependent variable yield multiple correlation coefficients (R) not much higher than the highest coefficient (r) for the simple relationships:

- R=.34 for the multiple correlation between FI, LF, IC, GC and IND as independent and Q53 as the dependent variable versus $r=.26$ for LF/Q53 (R=.35 when PI is used as an additional predictor)
- R=.24 for the multiple correlation between FI, LF, IC, GC and IND as independent and Q54 as the dependent variable versus $r=-.19$ for IND/Q54 (R=.28 when PI is included)

The scores and type of ownership and educational level of institution

Table 84(a,b) show the relationships between the scores and the type of ownership of the institution (Q2T) and the educational level (Q5/6):

Table 84a: Correlations between the composite scores (FI, LF, IND, GC, IC, PI - see Table 82) and:						
	- type of ownership (Q2T: "1" state owned; otherwise "0")					
	- educational level (Q5/6: "1" university study and further professional training and courses of this level for at least two subject areas; otherwise "0")					
	FI	LF	IND	GC	IC	PI
Q2T	-.23	-.06	-.03	-.15	.07	.04
Q5/6	-.01	-.06	-.00	.16	.02	.02
* exclusive of the 11 institutions with multiple response to Q2						