

RONNY F. A. WIERSTRA, GELLOF KANSELAAR, JOS L. VAN DER LINDEN  
AND HANS G. L. C. LODEWIJKS

## LEARNING ENVIRONMENT PERCEPTIONS OF EUROPEAN UNIVERSITY STUDENTS

Received 24 April 1998; accepted (in revised form) 17 February 1999

**ABSTRACT.** This article describes a study of the experiences of 610 Dutch students and 241 European students who studied at least three months abroad within the framework of an international exchange program. The Dutch students went to a university in another European country and the foreign students went to a Dutch university. Using a new questionnaire called the *Inventory of Perceived Study Environment (IPSE)*, students' perceptions of eight characteristics of the university learning environment were measured concerning the home university, the host university and the ideal learning environment. With this instrument, the learning environment can be described in terms analogous to the learning strategies performed. Large differences were found between the different countries in university learning environments, but students from different countries had strikingly similar opinions concerning their desired learning environment. There was a strong preference for activating instruction with a low threshold in teacher-student interaction and more room for student alternatives.

**KEY WORDS:** higher education, instructional preferences, learning environment, questionnaire development, student exchange, teaching style

### 1. INTRODUCTION

In this article, we report results of a study of the experiences of Dutch students and other European students who have studied at least three months abroad within the framework of international exchange programs. The Dutch students went to a university in another European country and the foreign students went to a Dutch university. The project was carried out at the request of the Dutch Organization for International Cooperation in Higher Education (NUFFIC). The motive for the project was that studying at a foreign university makes on students unknown demands that are different from what students are used to at their own university. It is important to know to what extent these discrepancies occur, how they are looked upon by the student, and whether these discrepancies give rise to problems and changes in learning strategies.

Research into the influence of the learning environment on the way of learning (the 'learning strategy') is relatively new. There certainly is some experience in the field of investigation in terms of relationships between learning environment and learning outcomes (see Fraser, 1998), but the



learning strategy used by students in this research usually functions as a black box. In order to investigate the influence of learning environment perceptions on learning strategies, Wierstra and Beerends (1996) tried to describe learning environment perceptions in *the same* terms as used for learning strategies. They devised the *Inventory of Process Aspects of the Learning environment* (IPAL) in close connection with the *Inventory of Learning Styles* (ILS) (Vermunt, 1992, 1993, 1998). Indeed, using the IPAL, it was possible to describe learning environments in the same terms as learning strategies. For example, a learning strategy can be oriented towards reproduction, but this reproduction-centredness can also apply to the learning environment (Hollanders, 1995; Wierstra & Beerends, 1996). An interesting question involves the extent to which the reproduction-centredness of the learning environment encourages a student to learn in a reproductive way. Some indications for this relationship are reported in literature (Meyer & Muller, 1990; Meyer & Parsons, 1989; Ramsden, 1992), but learning environment perceptions interact with other factors. The model of Wierstra and Beerends (1996) mentions some of these factors, such as the cognitive and affective entering characteristics of the student with regard to the instructional content.

The present study concerned *cross-cultural* aspects of learning environments and learning strategies. In the literature, hardly any starting points for investigating this can be found. It is remarkable that some cross-cultural research on learning strategies (Entwistle et al., 1989; Volet et al., 1994) speculates about the influence of learning environment perceptions, but that this variable itself hardly ever has been measured in this research. In our investigation, we considered it wise to measure the learning environment perceptions of students explicitly.

The project started with a pilot study involving interviews with 18 foreign students in The Netherlands and 60 Dutch students who had participated in an exchange program. The interviews indicated, among other things, large differences in university learning environment between The Netherlands and South European countries. South European students experienced the university learning environment in The Netherlands as more directed in terms of the learning of meaningful relations instead of mere reproduction, when compared with the learning environment at their own university. In the opinion of the South European students, the learning environment at their own university was oriented more towards knowledge transmission by teachers and knowledge reproduction by students (Evers, 1995). Furthermore, there were large differences in the psychological distance between the teacher and student. In the South European situation, the teacher is generally more difficult to approach than in the Dutch and North European situation

(Evers, 1995; Huijbregts & Roepers, 1995). In the main study, to which we restrict our attention in this article, we collected questionnaire data on a larger group of exchange students. In the questionnaire, learning strategies and learning environment perceptions were measured in a standardised and quantitative way. This article is restricted to the learning environment part of the survey. For an overall report of the investigation, including the learning strategy results, refer to Wierstra et al. (1997) and Kanselaar et al. (1998).

The general problem in the present learning environment study involved the extent to which students experience a change in learning environment during the exchange and how they perceive it. This question was divided into three subquestions:

1. How do students of different countries experience the learning environment at their (home) university?
2. Do students experience discrepancies between the learning environment at their own (home) university and the learning environment at the host university?
3. How satisfied are the students with the home and host learning environment? What type of learning environment do the students consider desirable (ideal environment)? Is the ideal learning environment different for students of different countries and is it similar to the home environment in certain respects?

## 2. METHOD

### 2.1. Procedure

The Nuffic organisation and several Dutch universities assisted us in collecting the addresses of Dutch and foreign exchange students. The questionnaire, which has an optically-readable answer sheet, and a self-addressed envelope were sent out to 998 foreign students, who were studying in The Netherlands during the exchange period (at least three months), and to 2449 Dutch students studying abroad.

The Dutch students received a questionnaire in the Dutch language, whereas the foreign students' questionnaire was in the English language. A large part of the questionnaire refers to the measurement of learning strategies (borrowed from the Inventory of Learning Styles of Vermunt, 1992) and to the measurement of learning environment aspects. The closed questions on learning environment constitute the *Inventory of Perceived Study Environment* (IPSE). In the IPSE, the student is asked about the

learning environment at the home university and at the foreign university, and about the desired learning environment. In addition to the closed questions making up the scales, some separate open questions are included in the questionnaire. In this article, we restrict ourselves to a description of the learning environment questions: both the IPSE and the open questions about the learning environment.

## 2.2. Subjects

We received data from 610 Dutch students and 241 foreign students. Of these respondents, 76% had studied three years or more before they participated in the exchange program. Probably, the low response rate of 20–25% is largely due to the extensiveness of the questionnaire (with remarks made by students on the questionnaire confirming this hypothesis) and the mobility of students after four years of study, which rendered invalid many initial addresses.

For the division of the foreign sample into subgroups, we used a combination of *geographical* criteria and *teaching culture* criteria. These latter criteria were borrowed from Hofstede (1986, 1996), who rated several countries on *teacher-student power distance* and on *uncertainty avoidance*. “Power distance as a characteristic of a culture defines the extent to which the less powerful persons in a society accept inequality in power and consider it to be normal” (Hofstede, 1986, p. 307). “Uncertainty avoidance is a characteristic of a culture which defines the extent to which people within a culture are made nervous by situations which they perceive as unstructured, unclear, or unpredictable; situations which they therefore try to avoid by strict codes of behaviour and a belief in absolute truths”.

TABLE I

Hofstede's characteristics for students from groups of countries		
Group	Countries	Characteristics according to Hofstede (1986, 1996)
South European students code: S or s_NL*	Spain, Italy, France, Greece, Belgium, Portugal	High power distance High uncertainty avoidance
North European students code: NW or nw_NL	UK, Sweden, Denmark, Finland, Norway, Ireland	Low power distance Low uncertainty avoidance
German-speaking students code: GE or ge_NL	Germany, Austria, Switzerland	Low power distance High uncertainty avoidance
Eastern European students code: EE or ee_NL	Poland, Hungary, Slovenia, Tsjechia	Not in Hofstede's study

The code with underscore means “home\_HOST” regions

On the basis of geographical criteria and power distance and uncertainty avoidance, the group of foreign students can be subdivided into the four groups shown in Table I.

Table II provides for the four foreign subgroups of students, information about the number of students, gender and field of study. Table III presents similar information for the Dutch students in different host countries. This table shows the regions to which Dutch students went in the exchange period (46% to the North European group of

TABLE II

Description of foreign students from different countries in terms of sample size, gender and field of study

Nationality	N	%	Gender		Field of study								
			M	F	A	B	C	D	E	F	G	H	Miss
<i>South European Region</i>													
Spain	27	11	9	18					4	12	2	6	3
Italy	24	10	9	15		2			10	3	3	5	1
France	19	8	9	10		1			3	8	2	4	1
Greece	10	4	6	4		1			2	1	4	1	1
Belgium	9	4	3	6	1	2			1	2			3
Portugal	6	3	4	2		1				2	1		2
	<u>95</u>	<u>39</u>											
<i>North European Region</i>													
Great Britain	35	15	14	20		3			9	3	7	6	7
Sweden	21	9	7	13		1			7	3	4	2	4
Denmark	9	4	5	4					3		2	3	1
Finland	5	2	5	0		3			2				0
Norway	4	2	2	2						2	2		0
Ireland	3	1	1	2					1	1			1
Canada	1	0	1	0									1
	<u>78</u>	<u>32</u>											
<i>German-Speaking Region</i>													
Germany	41	17	22	19		2				4	6	6	23
Austria	4	2	1	3					1	1	1		1
Switzerland	2	1	2	0					1			1	0
	<u>47</u>	<u>20</u>											
<i>Eastern European Region</i>													
Poland	8	3	4	4	1	1			4	1			1
Hungary	7	3	4	3	1					2	1		3
Slovenia	4	2	2	2					1	1	1	1	0
Tsjechia	2	1	2	0									2
	<u>21</u>	<u>9</u>											
Total N	241		112	127	3	17	0	0	49	46	36	35	55
%		100	46	53	1	7	0	0	20	19	15	15	23

A = Agriculture, B = Science, C = Technique, D = Health care, E = Law, F = Economics, G = Social Sciences, H = Languages, Arts

TABLE III

Description of Dutch students in different host countries in terms of sample size, gender and field of study

Country	N	%	Gender		Field of study								
			M	F	A	B	C	D	E	F	G	H	Miss
<i>South European Region</i>													
Spain	65	11	22	42	2	2	1	0	6	24	8	22	0
Italy	28	5	7	20	0	7	2	1	1	4	2	11	0
France	97	16	26	70	0	5	6	2	18	30	9	27	0
Greece	10	2	3	7	0	2	1	0	1	1	3	2	0
Belgium	40	7	20	19	0	1	3	5	3	16	5	6	1
Portugal	10	2	3	7	0	3	2	0	1	2	0	2	0
	250	41											
<i>North European Region</i>													
UK	195	32	59	134	2	8	6	10	23	60	40	46	0
Sweden	28	5	10	18	2	1	4	1	1	10	4	5	0
Denmark	14	2	3	10	0	0	0	0	4	2	6	1	1
Finland	6	1	3	3	1	2	1	1	0	0	0	1	0
Norway	17	3	4	13	3	2	2	0	2	4	4	0	0
Ireland	21	3	6	15	1	2	1	0	1	4	4	8	0
	281	46											
<i>German-Speaking Region</i>													
Germany	46	8	16	30	6	1	4	0	3	16	7	9	0
Austria	8	1	5	3	0	0	1	1	0	2	3	0	1
Switzerland	9	1	6	3	0	1	2	1	4	0	1	0	0
	63	10											
Miss	16	3%	6	9	0	0	1	0	1	7	1	3	3
Total	610	100%	199	403	17	37	37	22	69	182	97	143	6

A = Agriculture, B = Science, C = Technique, D= Health care, E = Law, F = Economics, G = Social Sciences, H = Languages, Arts

countries, especially the UK, 41% to the South European countries, and 10% to Germany or Austria).

### 2.3. Inventory of Perceived Study Environment (IPSE)

The IPSE consists of 37 Likert items, covering the eight scales (4–6 items per scale) of Involvement (interactive ways of teaching), Personalisation (social-emotional distance between student and teacher), Participation (students having a say in the method and content of instruction), Individualisation (attention to a student's self-steering with regard to form and content of the teaching-learning process), Connectedness (instruction is directed on internal relations in the learning domain), Reproduction (emphasis on student reproduction of teaching content), Application (instruction is directed on application contexts), and Task Orientation

TABLE IV  
Sample items from each IPSE scale

Scale	Sample items
Involvement	During classes, the subject matter is discussed with the students.
Personalisation	The teacher shows an interest in students' problems. It is easy for students to initiate communication with the teacher
Participation	The ideas and suggestions of students are used in the course.
Individualisation	I am given the opportunity to make my own decisions as to what to learn. I am given the opportunity to pursue my particular interest in the course.
Connectedness	The teacher expects students to discover differences and similarities between theories. The teacher expects students to take a critical view of various theories.
Reproduction	The teacher expects students to learn definitions by heart as literally as possible.
Application	The teacher makes a connection between theory and examples from practice. The instruction has a strong practical orientation.
Task Orientation	Students are given clear information about the aims and objectives of the course. It is clear what is expected of me during the course.

(structure, explicit clearness of instructional goals and procedures). In Table IV, some sample items of each scale are given. Participation and Personalisation are relevant to Hofstede's concept of power distance.

From the interview results in the pilot studies, the eight aspects encompassed by the IPSE turned out to be important dimensions on which university learning environments differ, to which students have to adapt, and which can lead to a modification of learning behaviour. In constructing IPSE scales, we reviewed several existing learning environment measures, such as the *College and University Classroom Environment Inventory* (CUCEI), *Classroom Environment Scale* (CES), and *Individualised Classroom Environment Questionnaire* (ICEQ) (Fraser, 1994, 1998), an instrument developed by Ramsden (1992) and the *Inventory of Process Aspects of the Learning Environment* (IPAL; Hollanders, 1995; Wierstra & Beerends, 1996).

Each of the 37 items in the IPSE is comprised of three parts (a, b and c), as illustrated in the following Application item:

- The teacher makes a connection between theory and examples from practice.
- a. I would like this to happen in a course.
  - b. This happened at my own university.
  - c. This happened at my foreign university.

Each sentence (a, b and c) is scored on a six-point scale, ranging from Definitely False to Definitely True. This item format allows measurement of perceptions of the home university environment (b), perceptions of the learning environment in the host country (c), the desired environment

(a), dissatisfaction with the home environment, which is the *absolute* value of  $|a - b|$ , dissatisfaction with the host environment,  $|a - c|$ , and preference for the home environment relative to host environment, namely,  $(|a - c| - |a - b|)$ . The latter preference measure indicates how much closer the desired learning environment is to the home learning environment than to the host learning environment. A preference score greater than zero indicates that a student is more content with the home learning environment than with the host learning environment, whereas a preference score of less than zero indicates the reverse.

The *a priori* distinctions between the eight study environment constructs in Table IV were confirmed by factor analysis on the 37 items and by correlational analysis at the scale level. Most of the correlations between the eight scales of the home university environment (and of the host university environment, and of the desired environment) were rather low, which indicates satisfactory discriminant validity for the eight constructs. Only for the construct of Involvement were there some high correlations with other constructs. Both in the Dutch group (610 students) and in the foreign group (241 students), Involvement in the home environment was positively correlated with Personalisation (0.65 and 0.74), Application (both 0.58), Individualisation (0.43 and 0.56) and Connectedness (0.41 and 0.52).

For each of the eight constructs, we also calculated the three correlations between the scales for the home, host, and desired environment. The average correlation was rather low (0.13) in the entire group, indicating that the assessments of home, host and desired environment can be conceived as independent (in agreement with our intentions and with results of Wierstra et al., 1987 and Wierstra & Beerends, 1996).

The internal consistency of the 24 scales (eight scales each for home, host and desired perceptions) were high. For the entire group of 851 students, Cronbach alpha reliability coefficients ranged from 0.88 to 0.97.

#### 2.4. *Open Questions About Comparisons of Home and Host University Learning Environments*

Apart from the closed IPSE questions, we also asked some open questions for which the students were asked to describe differences between their home university learning environment and the host university learning environment. We also asked students which aspects of each learning environment they prefer and for what reasons.



### 3. RESULTS

#### 3.1. Learning Environment Means for Seven Groups

For the 24 IPSE scales (home, host and desired learning environment on eight constructs), the mean scores for seven groups of students were calculated. The seven groups refer to the three Dutch groups from Table III and the four non-Dutch groups from Tables I and II. The results for Personalisation for six groups are graphed in Figure 1. The scores are mean scale scores at the *item* level (i.e. the student scale score divided by the number of completed items). In Figure 1, for the *opposite* exchange groups (e.g. for Dutch students going to South Europe and South European students going to The Netherlands), the home and the host environment graphs intersect. This is what we expect for a pair of strongly contrasting learning environments. This issue is elaborated in section 3.3.

#### 3.2. Perception of the Home University Learning Environment

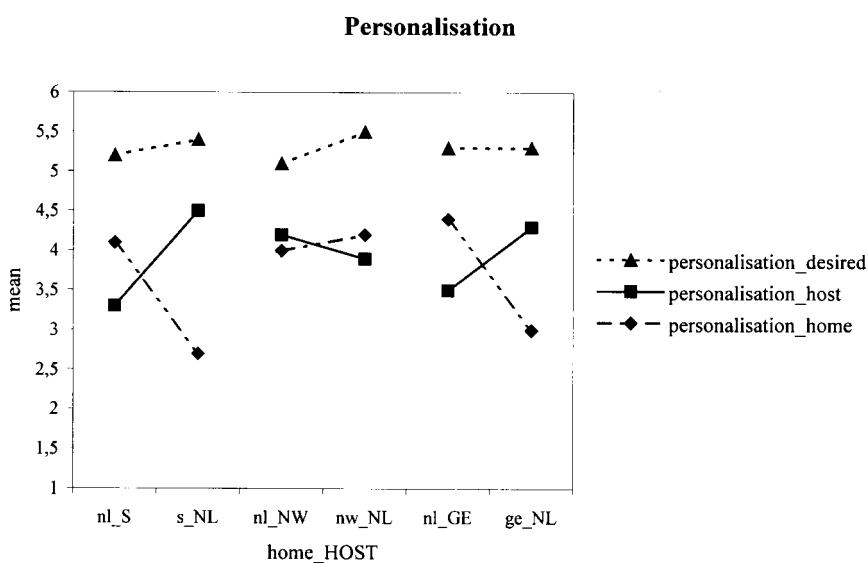


Figure 1. Personalisation means for six exchange groups: nl\_S: Dutch students going to South Europe; s\_NL: South European students coming to The Netherlands; nl\_NW: Dutch students going to North Europe; nw\_NL: North European students coming to The Netherlands; nl\_GE: Dutch students going to German speaking countries; ge\_NL: students from German speaking countries coming to The Netherlands.

We tried to find out whether the perceived learning environment at the home university was different for the Dutch group and the four non-Dutch groups distinguished in Tables I and II, namely, the South European group, the North European group, the group of German-speaking countries and the Eastern European group (research question 1). The use of MANOVA revealed that there were large and statistically significant differences between the five groups. The South European students appeared to have the highest score on Reproduction and the lowest scores on all other variables (with the exception of Connectedness for which the East European group scored the lowest). Thus, in the eyes of the South Europeans, the learning environment at their university was not very activating.

Because the student exchange was from The Netherlands to a foreign country and vice versa, we were especially interested in the differences between the Dutch learning environment on the one hand and the four foreign learning environments on the other hand. For each of the eight learning environment aspects, we conducted *t*-tests for the statistical significance of the differences in the home university environment between the Dutch group and each of the four other groups. We found strong and statistically significant differences between the Dutch group and the South European group on all learning environment dimensions. The Dutch learning environment seems much more activating than the South European one. Furthermore, we found significant differences between the Dutch group and the group of German-speaking countries on Personalisation, Involvement, Application and Task Orientation (all higher for the Dutch learning environment), and between the Dutch group and the East European group on Personalisation, Individualisation, Connectedness and Task Orientation (all higher for the Dutch environment). There were smaller differences between the Dutch and the North European learning environment (i.e. the profiles were close together). The Dutch group and the North European group differed significantly only on Connectedness, in favour of the Dutch learning environment.

### *3.3. Changes in Learning Environment: Discrepancies Experienced Between Home and Host University Learning Environment*

In view of the above results for the home university environment (research question 1), we expected that Dutch students studying in a South European country and South European students coming to The Netherlands would experience a change in learning environment. In order to investigate

whether this experience occurs (research question 2), we computed for each student for each of the eight learning environment constructs a *learning environment change score* which is the difference score obtained by subtracting the home learning environment score from the host learning environment score. For Dutch students who studied in a South European country, this change score turned out to be greater than zero for Reproduction, and less than zero for the other learning environment aspects. According to our expectation, the eight change scores of South European students were significantly different from the change scores of the Dutch students and opposite in sign.

For Dutch students going to a German-speaking country, the change scores for six of the eight learning environment aspects were opposite in sign to the change scores of students from those countries coming to The Netherlands. The differences between the two groups were statistically significant for change scores on Personalisation, Involvement, Application and Task Orientation. These results are consistent with the results for research question 1.

Furthermore, we found statistically significant differences for all learning environment aspects except Involvement for the change scores of Dutch students going to a North European country and North European students going to The Netherlands, in the direction of a stronger activating environment at the North European universities. Both Dutch students and students from the North European countries experienced the North European learning environment to be more activating than the Dutch learning environment. Except for Connectedness, we did not expect this result because of the similar profiles of the North European and Dutch universities (research question 1). This result could have arisen because the analysis was carried out with students who had experienced both the Dutch and the North European learning environment.

Next we consider the results of the open question to the students about what differences they experienced between the teaching at the home and the host university. Above all, students mentioned aspects of Student Involvement and Personalisation in response to this question.

### 3.3.1. *Extent of Student Involvement*

Dutch students who had studied in France, Italy, Spain, Portugal and Belgium had the impression that little student involvement is expected with regard to decisions about the study program and expressing opinions. In France, Italy and Spain, almost the only way of teaching is giving lectures. Especially in France and Spain, Dutch students experienced the teaching as very traditional with an emphasis on taking notes. Learning from notes is

more important than reading books. Respondents from southern countries assessed their own courses as being more formal, more crowded, less personal, more passive and more theoretical than the Dutch courses. They were of the opinion that, in The Netherlands, there is more independent self-study and the universities have good facilities, such as library, computers and up-to-date books.

In England, Scotland, Ireland, Sweden and Norway, the student is expected to work more independently than in the Dutch situation. This was the opinion both of the native students of these countries and of the Dutch exchange students. In England, there is frequent use of tutorials and much attention (according to Dutch students) for conceptual relations and for the relation between theory and practice. In the Scandinavian countries, projects and group assignments are frequently used. In Sweden, there is much attention to theory-practice relations. In Denmark, there is an emphasis on conceptual relations. In England and the Scandinavian countries, students are also asked for essays and much opportunity for discussion is offered.

### 3.3.2. *Extent of Personalisation*

The Dutch students who had studied in a country of the South European group (Spain, Italy, France, Greece, Portugal and Belgium) considered the teachers in those countries to be authoritarian, impersonal, detached and inaccessible for questions or problems when compared with teachers in The Netherlands. This opinion was shared by the South-European students who study there. Students from Southern countries found the contact between teacher and student more personal in The Netherlands and asserted that teachers are less authoritarian and that there is more consideration for students' opinions.

Dutch students who had been in Germany, Austria, Switzerland, Ireland and Scotland were confronted in the host country with a learning environment which has less personalisation than they are used to. Many students from Germany, Sweden, Finland, Norway and Ireland judged the teacher-student contact in The Netherlands to be more personal and the Dutch teachers to be very student-centred.

Many Dutch students experienced stronger personalisation in Denmark and England. This is consistent with reports of students from these countries who find the teacher-student contact in The Netherlands less personal than in their own country.

In the next section, we concentrate on the learning environment as desired by the students (research question 3).

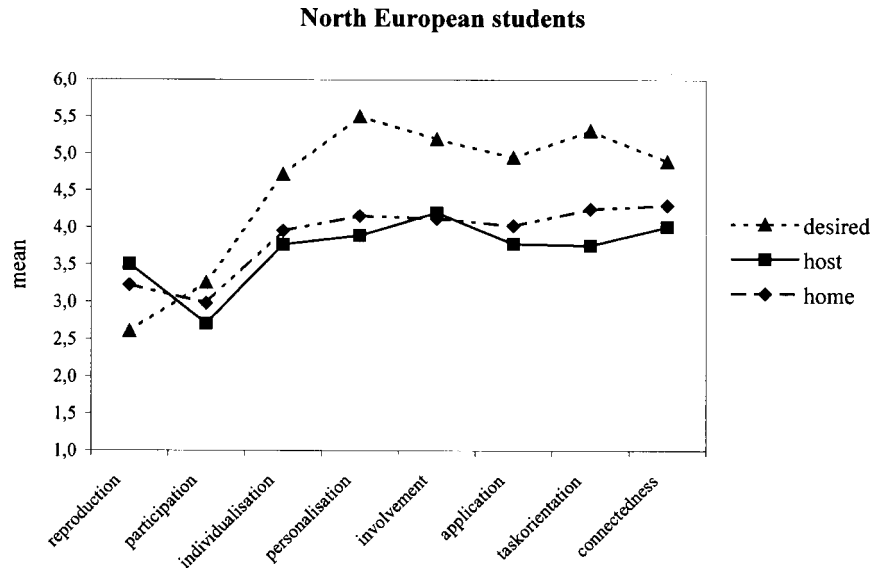


Figure 2. IPSE profiles for North European students.

### 3.4. Learning Environment Appraisal

#### 3.4.1. Similarity Between Nationalities in Learning Environment Desires

Figures 2 and 3 show that students' desires with regard to the learning environment are rather similar for North European and South European students. Identical profile shapes were found for the other regional groups. This similarity is rather surprising because the learning environments experienced by the students in the different countries vary substantially, as we have seen. It seems that, for European students, the desired study environment is not strongly determined by national (cultural) characteristics.

#### 3.4.2. Differences Between Desired Learning Environment and Experienced Learning Environment

For seven of the eight learning environment aspects, scores for the experienced learning environment (both home and host environment) were lower than scores for the desired learning environment (Figures 2 and 3). The exception was the scale assessing the 'reproduction-directed learning environment'. Based on multivariate and univariate significance tests, performed separately for the Dutch and the foreign group, the differences between the experienced home university learning environment and

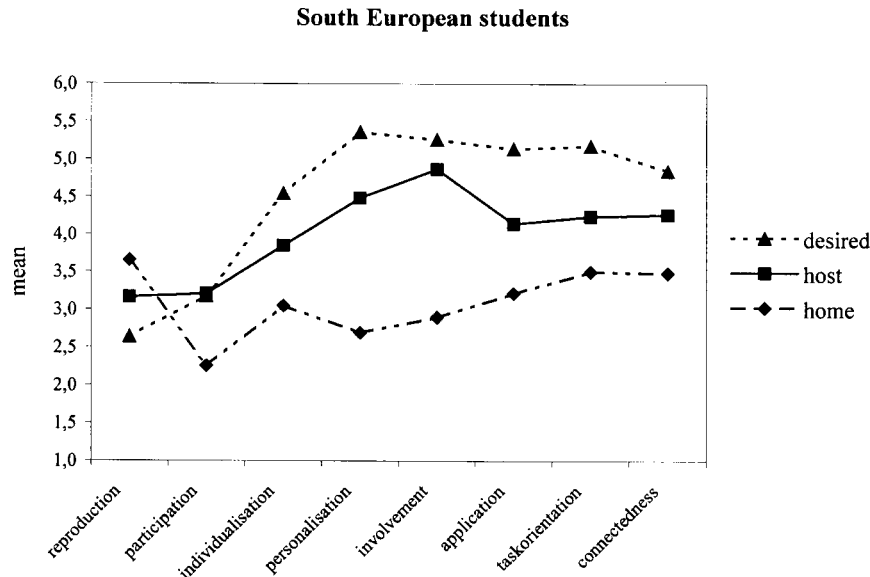


Figure 3. IPSE profiles for South European students.

the desired learning environment were statistically significant. So, we could ascertain that the students generally want a learning environment which is less reproduction-directed than what they have experienced previously, and that they want a stronger emphasis on activating learning environment aspects than they are used to.

### 3.4.3. Preference for Home or Host University Learning Environment

For Dutch students going to South Europe, the desired learning environment appears to be closer to the (experienced) home university environment than to the (experienced) host university environment. As we can infer from Figure 3, the reverse appears to apply to the South European students going to The Netherlands. In order to investigate the extent to which the home university environment is preferred to the host university environment in the seven exchange groups, we computed for each student for each of the eight learning environment aspects a *preference score* ( $|\text{desired} - \text{host}| - |\text{desired} - \text{home}|$ ). MANOVA performed for these eight preference scores revealed statistically significant differences between the seven groups. Subsequently, we compared the preference scores of Dutch students who went to a particular region with those of students from that region. Dutch students

going to a South European country preferred the Dutch learning environment on all eight aspects to the South European learning environment. South European students preferred the Dutch learning environment too. For Dutch students, the mean preference score for each aspect was greater than zero and, for the South European students, it was less than zero. The two groups differed significantly on all eight preference scores. Analyses for the North European group revealed that both Dutch students going to a North European country and North European students themselves preferred the North European learning environment to the Dutch learning environment on Personalisation, Reproduction, Connectedness and Application. Dutch students going to a German-speaking country, and students from these countries themselves, preferred the Dutch learning environment on Personalisation, Involvement, Application and Task Orientation.

#### 3.4.4. *Open Questions About Learning Environment Preferences*

In Table V, we show the frequency of answers given by the seven regional groups to a question about whether they prefer the home or the host university learning environment. Comparison of row 1 with row 2, of row 3 with row 4, and of row 5 with row 6 in Table V confirms the results for the IPSE preference scores as mentioned before. Inspection of rows 1 and 2 (a comparison between the Dutch and South European universities) reveals that the learning environment at the Dutch universities is preferred. For

TABLE V

Preference for home or host environment (straight question)

Student group	Preference for home institution		Preference for host institution	
	N	%	N	%
nl_S	133	78	38	22
s_NL	18	22	64	78
nl_NW	95	51	90	49
nw_NL	39	70	17	30
nl_GE	27	63	16	37
ge_NL	13	39	20	61
ee_NL	3	20	12	80
Total	328	56	257	44

nl\_S: Dutch students going to South Europe; s\_NL: South European students coming to The Netherlands; nl\_NW: Dutch students going to North Europe; nw\_NL: North European students coming to The Netherlands; nl\_GE: Dutch students going to German speaking countries; ge\_NL: students from German speaking countries coming to The Netherlands; ee\_NL: students from Eastern European countries coming to The Netherlands.

each student who prefers the South European learning environment, there are more than three students who prefer the Dutch learning environment.

We also asked the students in an open question for the reasons for their preferences. An interesting and convincing result was that the reasons given were the same irrespective of the country preferred. These are the same reasons as for the seven groups in Table V and can be conceived as indicators of an ideal study environment. Five reasons are:

- the small distance between teacher and student;
- opportunity for student involvement (e.g. discussion/expression of opinions);
- less servile and passive top-down instructions and more freedom of choice;
- an appeal to deep and critical study;
- little emphasis on reproducing facts.

On the basis of these five aspects, Dutch students who have studied in the southern countries and many southern students themselves prefer Dutch learning environments. Dutch students who have studied in the Northern countries (especially England, which scores high on all five aspects) often prefer the education in Northern countries, just as many students from those countries themselves do.

#### 4. CONCLUSION AND DISCUSSION

In this study, large differences between countries were found in university learning environments as perceived by students. The group of South European countries scored relatively high on reproduction-centredness of the learning environment and relatively low on seven other characteristics related to activating (process-oriented) instruction and which are much appreciated by students. The profile of North European countries was the opposite to that of the South European countries.

In principle, our learning environment measurements refer to perceptions of the students. To what extent do student perceptions refer to a real situation? Our approach involving the student as a source of data can be contrasted with an external observer's assessment of classroom communication and events (Brophy & Good, 1986; Fraser, 1998). Partly, the two contrasting approaches measure two different constructs, which Murray (1938) and later Stern (1970) called 'beta press' and 'alpha press', respectively. Although student perceptions refer primarily to beta press, we can assume on the basis



of the literature that these perceptions also provide much information about alpha press, or the real teaching-learning situation. Thus, Wierstra and Wubbels (1994) report that the within-class variance in learning environment perceptions is considerably lower than the between-class variance. Further, in studies in which both classroom observation and questionnaires are used, often high correlations are found between three different measures: the externally-observed learning environment; teacher perceptions as measured by a questionnaire; and aggregated student perceptions (Tobin et al., 1990). In addition, our investigation revealed convergence in the results of the different exchange groups. So, Dutch students who went to South European countries judged the differences between the Dutch and the South European learning environments in the same way as did South European students who went to The Netherlands. This also supports the value of students' perceptions.

In this study, the university exchange confronted students with a learning environment which differed considerably from what they were used to. This pattern emerged consistently from the open and closed questions. In spite of these large discrepancies between home and host university learning environment, there were many cases of great appreciation for the foreign learning environment to this extent that students sometimes preferred this environment to their own. So, South European students mostly preferred the Dutch host environment and Dutch students, who were guests in England, often preferred the English study environment. That does not alter the fact that many students, such as Dutch students who went to a South European country, were confronted with a learning environment which not only differed considerably from the environment to which they are accustomed, but which they considered to be far from ideal (as they reported on the scales for the desired learning environment). From the interview part of the study (Kanselaar et al., 1998), it appears that students were not prepared for this contrast. Therefore, it seems advisable to pay attention to this aspect in student information and counselling.

This study showed once more that the desires which students have about the learning environment are not related to the specific long-term *experiences* which they have with a particular type of learning environment (see also Fraser, 1994, 1998; Fraser & Fisher, 1983a, 1983b; Wierstra et al., 1987). Students from different countries with strongly contrasting learning environments agree in their opinions about the desired learning environment. In the students' opinions, the learning environment should certainly not be reproduction-centred and it should involve much personalisation (small

distance between teacher and student) and much student involvement.

However, we should remember that the question about the ideal learning environment was asked after the exchange. Thus, students could form an (ideal) image of a learning environment which reaches further than the environment to which they are accustomed in their own country. Maybe such a comparison becomes activated by the research design, because we asked students in each IPSE item not only about the desired learning environment, but also, immediately afterwards, about the real learning environment as experienced at their own university as well as at the host university. Therefore, it would be interesting to replicate research into the desired learning environment among students who did not participate in an exchange. Anyhow, our research seems to reveal that, for European students, the desired learning environment is not strongly determined by national (cultural) characteristics. Obviously, it concerns relatively generally and valid ideals which students have nowadays with regards to the university learning environment. But, it is possible that exchange students constitute a very select group as far as their way of learning is concerned. This might be a second reason to replicate this part of the study among students who do not participate in an exchange program. Also non-European students could be a part of the research population in this new investigation.

Finally, we would like to emphasise some benefits of the research. A new research tool, the Inventory of Perceived Study Environment (IPSE), was developed for measuring eight distinct learning environment aspects in higher education and in upper secondary education. It concerns learning environment aspects which are phrased in the same terms as learning strategies. We expect that the utility of the IPSE will increase when the questionnaire is written for all students in their native language and not only (like it is in our research) for the Dutch students and students of English-speaking countries. Several findings supported the validity of the IPSE, including correlational analyses at the item and scale levels, the convergence of results across the three types of scales (home, host and desired university learning environment) and the convergence of the results for the IPSE scales and for the open questions.

## 5. ACKNOWLEDGEMENT

We are indebted to Jan Vermunt (Leiden University) for his participation in the initial stages of the project.

## REFERENCES

- Brophy, J. & Good, T.L. (1986). Teacher behavior and student achievement. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed.; pp. 328–375). New York: Macmillan.
- Entwistle, N., Kozeki, B. & Tait, H. (1989). Pupils' perception of schools and teachers: relationships with motivation and approaches to learning. *British Journal of Educational Psychology*, 59, 340–350.
- Evers, B. (1995). *Learning environments perceptions and learning strategies of exchange students in the Netherlands* [in Dutch]. Tilburg, The Netherlands: Department of Psychology, Tilburg University.
- Fraser, B.J. (1994). Research on classroom and school climate. In D. Gabel (Ed.), *Handbook of research on science teaching and learning* (pp. 493–541). New York: Macmillan.
- Fraser, B.J. (1998). Science learning environments: assessment, effects and determinants. In B.J. Fraser & K.G. Tobin (Eds.), *International handbook of science education* (pp. 527–564). Dordrecht, The Netherlands: Kluwer.
- Fraser, B.J. & Fisher, D.L. (1983a). Student achievement as a function of person-environment fit: a regression surface analysis. *British Journal of Educational Psychology*, 53, 89–99.
- Fraser, B.J. & Fisher, D.L. (1983b). Use of actual and preferred classroom environment scales in person-environment fit research. *Journal of Educational Psychology*, 75, 303–313.
- Hofstede, G. (1986). Cultural differences in teaching and learning. *International Journal of Intercultural Relations*, 10, 301–320.
- Hofstede, G. (1996). Differences and danger: cultural profiles of nations and limits to tolerance. *Higher Education in Europe*, 21(1), 73–94.
- Hollanders, N. (1995). *Steering of learning processes* [in Dutch]. Utrecht, The Netherlands: Department of Education, Utrecht University.
- Huijbregts, S.M. & Roepers, H. (1995). *Studying abroad* [in Dutch]. Utrecht, The Netherlands: Department of Education, Utrecht University.
- Kanselaar, G., van der Linden, J.L., Lodewijks, J.G.L.C., Vermunt, J.D.H.M. & Wierstra, R.F.A. (1998). *Studying abroad – experiences of exchange students*, Utrecht University, The Netherlands, unpublished manuscript.
- Meyer, J.H.F. & Muller, M.W. (1990). Evaluating the quality of student learning I: an unfolding analysis of the associations between perceptions of learning context and approaches to studying at an individual level. *Studies in Higher Education*, 15, 131–154.
- Meyer, J.H.F. & Parsons, P. (1989). Approaches to studying and course perceptions using the Lancaster Inventory – a comparative study. *Studies in Higher Education*, 14, 137–153.
- Murray, H.A. (1938). *Explorations in personality*. New York: Oxford University Press.
- Ramsden, P. (1992). *Learning to teach in higher education*. London: Routledge.
- Stern, G.G. (1970). *People in context: measuring person-environment congruence in education and industry*. New York: Wiley.
- Tobin, K., Kahle, J.B. & Fraser, B.J. (Eds.). (1990). *Windows into science classes: problems associated with higher level cognitive learning*. London: Falmer Press.
- Vermunt, J.D.H.M. (1992). *Learning styles and regulation of learning in higher education – towards process-oriented instruction in autonomous thinking* [in Dutch]. Lisse, The Netherlands: Swets & Zeitlinger.

- Vermunt, J.D.H.M. (1993). Constructive learning in higher education. In J.K. Koppen & W.D. Webler (Eds.), *Strategies for increasing access and performance in higher education* (pp. 143–157). Amsterdam, The Netherlands: Thesis Publishers.
- Vermunt, J.D. (1998). The regulation of constructive learning processes. *British Journal of Educational Psychology*, 68, 149–171.
- Volet, S.E., Renshaw, P.D. & Tietzel, K. (1994). A short term longitudinal investigation of cross-cultural differences in study approaches using Biggs' SPQ questionnaire. *British Journal of Educational Psychology*, 64, 301–318.
- Wierstra, R.F.A. & Beerends, E.P.M. (1996). Learning environment perceptions and learning strategies of first year social sciences students [in Dutch]. *Journal for Educational Research*, 21, 306–322.
- Wierstra, R.F.A., Jörg, T.G.D. & Wubbels, Th. (1987). Contextual and individually perceived learning environment in curriculum evaluation. In B.J. Fraser (Ed.), *The study of learning environments, Volume 2* (pp. 31–41). Perth, Australia: Curtin University of Technology.
- Wierstra, R.F.A., Kanselaar, G. & van der Linden, J. (1997, December). *Changes in university learning environment and in learning strategy of European exchange students*. Paper presented at the annual conference of the Australian Association for Research in Education, Brisbane, Australia.
- Wierstra, R.F.A. & Wubbels, Th. (1994). Student perception and appraisal of the learning environment: core concepts in the evaluation of the PLON physics curriculum. *Studies in Educational Evaluation*, 20, 437–455.

RONNY F.A. WIERSTRA, GELLOF  
 KANSELAAR, JOS L. VAN DER LINDEN  
*Department of Educational Sciences*  
*Utrecht University*  
*P.O. Box 80.140*  
*3508 TC Utrecht*  
*The Netherlands*

HANS G.L.C. LODEWIJKS  
*Department of Psychology*  
*Tilburg University*  
*Tilburg*  
*The Netherlands*

(Correspondence to: Ronny F.A. Wierstra)