

## Face-to-face versus distance learning: psychological consequences and practical implications

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Distance learners were found to differ from face-to-face learners in that they were more 'isolated' and experienced lower levels of self-confidence. They also displayed a higher desire for structure in their learning materials, and this was interpreted as a tactic for dealing with their more difficult learning situation. If distance educators react simply by providing the desired structure, they necessarily neglect certain desirable educational goals such as fostering willingness to organize one's own learning or to evaluate one's own work. For these reasons, it is preferable to try to develop teaching and learning approaches which help students master their difficulties, rather than accepting the difficulties as a limiting factor in distance learning settings.

Since 1977 the German *Fernuniversität* (Open University) in Hagen has distributed to at least some of its students a unit entitled *Studying at the Open University*. This material has undergone various changes with the passage of time, but has regularly included a questionnaire containing items of considerable interest to the question posed by Cropley and Kahl (1983): 'Are there fundamental psychological differences between distance and face-to-face learning?'. In particular, the 1982 Hagen study (Möllers-Oberrück, 1984) collected data concerning the goals students hoped to achieve with the help of their distance course, the intensity of their planned course, competing responsibilities during the course, contact with other students or with other people who already possessed the desired qualification, the conditions under which home study would be carried out, access to a library, learning behaviour and learning conditions.

Included in this study were a total of 289 students of Education and Social

Science, and these people were selected for the purpose of the present study. In order to compare these distance learners with 'normal' learners attending lectures as full time students at a conventional institution, a number of the items in the Hagen study were assembled in the form of a questionnaire, and administered to 112 young people studying Education and Social Science at a conventional *Fachhochschule* (College of Higher Education). In addition to personal questions concerning age, sex and subject being studied (the comparison questionnaires were filled out anonymously), 20 items taken from the original Hagen study were administered to the members of the comparison group. These related to areas already mentioned above such as motivation, study habits, availability of learning resources, extent and nature of contacts with other students and graduates in the student's area of specialisation, conditions under which these students could imagine dropping out, and so on.

With the exception of a single item concerned with reasons for studying, in which case more than one alternative could be selected, items consisted of a number of statements from which the students were asked to choose the one which came closest to describing them. One item, for instance, asked about conditions under which students would give up their course, and listed various possibilities (see below), while another asked about interest in working in a group. These items are reproduced here, along with the alternatives offered.

8. I would break off my studies
  1. if sickness severely interrupted my progress
  2. if my load at work increased
  3. if other people suffered too much under my course
  4. if I found that I did not possess the necessary basic knowledge
  5. if I got the chance to transfer to a university
  6. if they demanded too much of my time
  7. only as a last resort.
10. Would you like to work with a group of students?
  1. Yes, at the college.
  2. Yes, both at college and elsewhere.
  3. I would like to, but I have no possibility of doing it.
  4. No, I'm not interested.

A few items departed from this format by requiring simply a 'Yes' or 'No' answer, while one listed a number of possible reasons for studying, and invited students to indicate one or more which applied in their case (e.g. 'I want to get ahead in my job', 'The course will help me to fulfil myself', 'I simply want to study in the usual way'). (Naturally, the original Hagen investigation and the comparison study carried out by the present authors were conducted in German. All material taken from the questionnaires

and cited in the present article has been translated into English, with an attempt to achieve equivalent content, level of formality/informality, etc.)

Subsequently, the responses of the members of the comparison group of 112 face-to-face learners were compared with those of the 289 distance learners, and the significance of differences between the frequencies with which members of the two groups chose the various alternatives tested statistically. The purpose of the present paper is to summarize the differences which emerged between the two groups, and to indicate their importance for understanding the psychological differences between learning under face-to-face and distance conditions.

## RESULTS

Of the 19 items for which statistical comparisons of the group distributions were made, 18 yielded significant  $\chi^2$  values. The items on which there were significant differences have been subjected here to what might be called 'subjective content analysis' — as distributions only and not raw data were readily available to us for the Open University students, it was not possible to carry out formal analyses such as factor analysis. Items were grouped according to superordinate categories, and are presented below according to these categories.

### Demographic characteristics

As might be expected, there were substantial differences of a purely demographic nature between the two groups; the overwhelming majority of the face-to-face learners in the conventional college were under 25, whereas the largest single group of distance learners were aged between 25 and 34 ( $\chi^2 = 46.6$ ,  $p < 0.01$ ). A significantly higher proportion of the conventional students than of the distance learners consisted of women ( $\chi^2 = 12.2$ ,  $p < 0.01$ ). There was a significant tendency for more of the distance learners to be living in a conventional household with husband or wife and children ( $\chi^2 = 26.7$ ,  $p < 0.01$ ), while a much higher proportion of them had already obtained a job qualification ( $\chi^2 = 103.0$ ,  $p < 0.01$ ).

These results are scarcely surprising, since they reflect some of the facts of life as far as distance learning at tertiary level is concerned. Distance learners consist to a considerable degree of people who have already acquired a job qualification and have worked at that job for some time; it is also the common experience that the majority of conventional students in Education and Social Science are female, whereas those who later go on to improve their qualification through distance education consist, to a much greater degree, of men, and especially of 'family men'. Thus, the demographic findings may be regarded as confirming that the two groups studied in the present investigation really did differ from each other in ways one would expect (distance learners were older, more frequently male, more often lived with spouse and children, etc, whereas face-to-face

learners were younger, more frequently lived alone or with their parents, were more often female, and less frequently possessed a job qualification).

### Motivation

About two-thirds of the distance learners reported that their predominant reason for studying was to obtain the diploma to which the course led. By contrast, about 55% of the face-to-face learners reported that they simply wanted to take part in seminars, carry out assignments etc; this difference was highly significant ( $\chi^2 = 84.6$ ,  $p < 0.01$ ). On the other hand, virtually all of the face-to-face students anticipated that they would eventually receive their diploma, whereas about 40% of the distance learners did not ( $\chi^2 = 36.4$ ,  $p < 0.01$ ). The face-to-face learners thus expected to graduate, although this was not the basic motivating factor, but rather something which happens almost automatically as a result of attending the institution in question. The distance learners, by contrast, studied in order to graduate, although realizing that this might not occur.

A related and striking difference between the distance learners and the face-to-face learners lay in the fact that, with an exception which will be mentioned shortly, the distance learners gave clearer, more differentiated statements about their reasons for undertaking the course in question. The small deviant group just mentioned consisted of about one sixth of the distance learners who gave as their main motivation a general desire to try themselves out, or to see if they could make a go of studying. As might be expected, a substantial proportion (about 65% in fact) of the distance learners gave conventional reasons such as 'keeping up with new developments' or 'compensating for defects in earlier education' as at least one of the grounds for taking the Open University course. Interesting in this context was that many of them did not really wish to study Education and Social Science — they took it possibly because it was the course most readily available to them at the Open University.

### Study conditions

As might be expected, the distance learners had far less opportunity to dedicate themselves to their studies. They were significantly more frequently confronted with household tasks and duties, for example as marriage partner and parent, than the face-to-face students ( $\chi^2 = 42.0$ ,  $p < 0.01$ ), and engaged significantly more often in either full time or part time work ( $\chi^2 = 23.0$ ,  $p < 0.01$ ).

One pronounced characteristic of the study situation of distance learners was their *isolation*. Not only did they have significantly less access to supportive structures such as a library ( $\chi^2 = 13.7$ ,  $p < 0.01$ ), but they were also isolated from contact with other learners. For instance, a substantial group of about one third of the distance learners complained that they would like to work in a group with other people, but that they were unable to make the necessary contacts. This problem arose significantly

more frequently among distance learners ( $\chi^2 = 36.0$ ,  $p < 0.01$ ). In a similar vein, about 65% of the distance learners reported that they were not able to discuss their subject with acquaintances who had already completed the course, a significantly greater proportion than was the case with face-to-face students ( $\chi^2 = 44.8$ ,  $p < 0.01$ ). Nearly half the distance learners reported that they have no opportunity of discussing their course with anybody, whereas all of the face-to-face learners reported that such conversations were possible. This difference was, of course, statistically significant ( $\chi^2 = 68.2$ ,  $p < 0.01$ ).

A picture thus emerges of distance learners who are thrown strongly onto their own resources. This is reinforced by the fact that about two thirds of them reported that they work to a set plan, whereas the majority of face-to-face learners chose alternative answers instead, indicating that they work only sporadically or when they are placed under special pressure by, for instance, an examination. In other words, the distance learners reported a much higher level of organization and self-discipline ( $\chi^2 = 93.4$ ,  $p < 0.01$ ). Interestingly, about a third of the distance learners reported that they had already had experience with adult education or other forms of non-school-based study, whereas fewer than 10% of the face-to-face learners had had such experience ( $\chi^2 = 17.6$ ,  $p < 0.01$ ). Naturally, this may well be a simple consequence of the significant age difference between the two groups of learners, but it is important for the present purposes because it shows that the distance learners have, to some extent at least, already practised out-of-school learning.

### **Psychological consequences for learners**

As has already been pointed out, the distance learners had clearer expectations of their studies and worked more systematically. Nonetheless, they showed significantly less self-confidence ( $\chi^2 = 14.9$ ,  $p < 0.01$ ). They also foresaw significantly more frequently the possibility that they might have to break off their studies, about half of them expressing this view ( $\chi^2 = 8.25$ ,  $p < 0.01$ ). Once again, the more differentiated views of the distance learners became apparent in this domain — whereas face-to-face learners gave only vague reasons as possible causes of breaking off their studies (for example 'I would give up my studies if I found it impossible to continue with them'), there was a significant tendency for distance learners to give specific reasons such as 'I would give up my studies if I became sick', 'I would give up my course if other people suffered too much because of it', etc. ( $\chi^2 = 18.8$ ,  $p < 0.01$ ).

The consequences of the more difficult learning situation and the greater isolation of distance learners thus seem to be that they feel less confident about their ability to complete their studies, and that they see more serious prospects of not being able to complete them. One reaction to this was an increased need by distance learners for a high level of structure in

Table 1  
 Overview of the characteristics of distance and face-to-face learners

Area	Characteristics	
	Distance learners	Face-to-face learners
Demographic structure	<ul style="list-style-type: none"> <li>— aged 25 and over</li> <li>— male</li> <li>— living in marital home</li> <li>— possessing a job qualification</li> </ul>	<ul style="list-style-type: none"> <li>— aged under 25</li> <li>— female</li> <li>— living with parents or alone</li> <li>— possessing no job qualification</li> </ul>
Motivation	<ul style="list-style-type: none"> <li>— specific reasons for studying</li> <li>— interested in keeping up with new developments and/or remedying defects</li> <li>— would really like to study something else</li> </ul>	<ul style="list-style-type: none"> <li>— general, undifferentiated reasons for studying</li> <li>— satisfied with course being studied</li> </ul>
Study conditions	<ul style="list-style-type: none"> <li>— studies compete with work and family responsibilities</li> <li>— work in isolation from other people</li> <li>— have fewer contacts with libraries</li> <li>— work to a set plan (organization and self-discipline)</li> <li>— have had earlier experience with adult education, etc.</li> </ul>	<ul style="list-style-type: none"> <li>— studies are the dominant activity</li> <li>— work in groups, contact with other graduates</li> <li>— make more use of libraries</li> <li>— work mainly in response to pressure</li> <li>— have no prior experience with adult education</li> </ul>
Personal consequences	<ul style="list-style-type: none"> <li>— lower self-confidence</li> <li>— see the possibility of breaking off studies</li> <li>— want teaching materials to be highly structured</li> <li>— prefer set surroundings for studying</li> </ul>	<ul style="list-style-type: none"> <li>— higher self-confidence</li> <li>— would break off only as last resort</li> <li>— prefer to provide own structure</li> <li>— work in different settings</li> </ul>

their learning — about 65% of them called for the provision of exact details in teaching material, possibly going as far as the kind of thing which is seen in programmed instruction. By contrast, 75% of the face-to-face learners said that they preferred to work independently, receiving only advice and hints from their instructors about what, when and where to learn ( $\chi^2 = 33.6$ ,  $p < 0.01$ ). This desire for structure was also reflected in the significantly greater preference of distance learners for working to a plan, which has already been referred to. It is also supported by the fact that a significantly higher proportion of the distance learners reported that they have a set place at home where they work, and prefer to sit down and study in set surroundings ( $\chi^2 = 19.2$ ,  $p < 0.01$ ).

In order to permit a clear comparison of the two groups, significant differences are summarized in Table 1.

### INTERPRETATION AND DISCUSSION

In an earlier paper (Cropley and Kahl, 1983), the present authors argued that the single, definitive characteristic of distance education is that there is direct contact neither between teacher and learner, nor among learners. All else flows more or less automatically from this. The paper then went on to list psychological characteristics of teaching and learning at a distance deriving from this state of affairs, and to compare distance learning with the equivalent characteristics of face-to-face learning. The present paper may be seen as having two functions: it documents empirically a number of the differences between distance education and face-to-face education (both objective and psychological), and it shifts the emphasis away from the learning setting itself, providing some empirically-derived insights into the psychological consequences of distance learning for learners.

The distance learners more frequently had a job, of course, and more frequently lived in a conventional marital home setting. Not surprisingly, Cropley and Kahl's (1983) point was confirmed, that the distance learner's environment is not particularly well designed for learning purposes. As Heinze (1983, p. 60) put it '... distance education seems to have an alienating effect ... It narrows areas of communication and to a large extent puts a burden on relationships'.

In addition to this, the distance learners suffered from 'isolation' — they had few opportunities to discuss their work with appropriate other people, or even work in a library. As far as motivation was concerned, the distance learners regarded their studies as a specific way of dealing with particular needs (especially keeping up with new developments and/or remedying defects in their earlier education), rather than simply as something one does because it is normal and natural. Heinze (1983) went so far as to argue that many distance learners take up their studies as a way of coping with a personal crisis, especially at work — the course is it-

self a kind of therapy, and successful mastery of it a proof of competence and personal worth. Since factors such as prestige are often associated with the crisis in question, it is apparent that there is also a social-psychological factor at work.

As a result of this combination of motivation and learning conditions, the distance learners displayed a special set of psychological characteristics, which are seen here as 'personal consequences' of the distance learning setting. Distance learners must accept the possibility that they may have to break off their studies and, as a result, they display *reduced levels of self-confidence*. This leads in turn to a *desire to structure and organize their learning*. They are inclined to work to a set plan, setting aside special time periods for learning, and preferring to have a special area, complete with desk, in which they can learn. They have a strong preference for teaching and learning materials which are clear, explicit and highly structured.

This can be interpreted in different ways. It could, for instance, be the result of a desire on the part of the distance learners to complete their studies in the way which seems to them to be the most 'economic', perfectly understandable in view of the extra load resulting from the circumstances under which they study. As Heinze pointed out, the establishment of a program or regimen which must be preserved at all costs (since it is vital for success) could also serve as a mechanism for justifying the disruptions of family life resulting from participation in the course.

The desire for structure can also be seen as a mechanism for reducing anxiety arising from competing roles and needs, inconsistent feedback from the immediate environment, lower levels of self-confidence, or self-doubt generated by the crisis described by Heinze. A highly structured way of working could serve to reassure anxious or self-doubting people that they really are dealing with the situation in an efficient and effective way, and not merely grasping after vague and ill-defined solutions. The structure thus functions as an emotional crutch.

A third possibility is that distance learners really are capable only to a limited degree of effectively structuring complex materials and tasks. Face-to-face learners may well have similar problems, but they receive support from immediate contact with a teacher. Distance learners, having no such contact, seek a pre-prepared structure as a substitute. In practice, there is probably a complex interaction among all three sets of influences.

These findings have implications for the practice of distance education. Most obvious of these is that distance learning should be supported by appropriately explicit structures in teaching and learning materials. These should be presented in a non-threatening way (not, for instance, as something which one must master or fail), should build up learner's self-confidence by providing many opportunities for small successes, and



should awaken expectations of success by showing that apparent difficulties will disappear as a result of patient effort and regular study. Weaknesses in cognitive structuring could be dealt with by presenting material in a highly organized, logical and easily understandable way. In addition, discussion of frequently occurring problems, errors, misunderstandings etc, as well as ways of coping with them could help distance learners achieve a degree of success, despite such weaknesses. Finally, provision of large numbers of clearly formulated, detailed exercises, on which students can work without time pressure, can demonstrate to them that they have achieved a considerable level of competence.

Such measures could, however, be regarded as more or less pandering to the weaknesses of distance learners, i.e. as trying to treat the symptoms without attacking the real ailment. This might well be acceptable as a pragmatic way of supporting distance learners, especially to the extent that distance education institutions see no possibilities for efficiently 'curing' their students' weaknesses. Many of the influences which lead to the anxiety and cognitive difficulties mentioned are, in any case, out of the control of distance educators. Some of them were already at work during the learners' school years (see Cropley, 1978, for a discussion of the effects of school on learning in adults). Others are inherent in the physical setting itself — living as part of a family, competition between education and work, etc. It is utopian to imagine that distance educators will be able to do much about these influences. Nonetheless, the decision to proceed by providing students with highly effective crutches to help them achieve their goals means that while certain educational principles are supported, others are, unfortunately, neglected.

It is desirable that students learn to think and behave, not only according to proven knowledge, processes and strategies, which they take over wholesale from the past by learning them by heart, but that they also acquire the competencies and personality traits needed for coping with the often complex and even frightening tasks arising from present and future challenges. This demands that learners be helped to develop willingness and skill in adapting what they have learned in ways appropriate to new situations, and inventing new means for understanding and overcoming such situations. Preparing students in this way would inevitably mean that distance educators would have to seek consciously to find ways of treating students' weaknesses, rather than simply living with them.

The first task for distance educators wishing to proceed in this direction would be to set up learning experiences for their clients which either help to break down the anxiety already referred to, or help learners to tolerate it, rather than accepting it as a fact of life and narrowing and focussing learning accordingly. In fact, what has to be aimed at is the development of a new orientation in students: their desire for a pre-determined structure seems to be mainly related to what might be called an 'economic'

orientation towards their studies. They are interested in acquiring knowledge and techniques as products which, if they are used appropriately, have immediate practical application and, by leading to success in problem solving or in other practical areas, increase the prestige and self-esteem of the learner (see the earlier discussion on motives of distance education students). What they need, however, is an orientation focussing on interest in and understanding of the mechanisms, processes and methods which lead to the products in question. They need help in learning to optimize these products by developing their own ability to judge the quality of their own work and to improve by themselves. In other words, not the product but the methods through which it is produced need to have first priority.

How could such a fundamental change be achieved in distance education, remembering that if the students are not provided with what they want, they may break off their studies? An important step would be deliberately to prepare students for structuring tasks on their own, and to encourage them in the belief that they are capable of doing this, even if some practice is needed. Of course, it is necessary to take into account difficulties which may — or probably will — arise: when students are asked for the first time to try out their own ways of structuring tasks and solving problems, they are likely to assume that they will be completely unsuccessful, with the result not only that they become anxious, but that they may regard their efforts as a pure waste of time and energy. Therefore, learning materials need to make it plain to learners that

- they should not place too much emphasis on immediately useful results, but on acquiring methods and strategies;
- one can never know in advance exactly what will result from thinking processes, so that it is necessary to plunge in, even where outcomes are uncertain;
- the real purpose of the program is to learn how to direct and guide one's own work; as one becomes more skilful, favourable results become more common.

Following this line of thinking, distance education learning material could contain chapters on task-structuring and creative problem-solving. As such material is likely to be viewed as a luxury or to arouse feelings of scepticism, uncertainty or anxiety, it might be useful to present it in ways which encourage learning by imitation or by identification, for example with the help of anecdotes about people who have achieved success by applying their own ways of thinking. Students should be encouraged to record the strategies and steps they employ spontaneously in task-structuring and problem-solving, and afterwards to assess the success of their own efforts. Such descriptions of thinking processes and associated self-evaluation could be examined by distance educators, who would then

give hints to students on how to improve their cognitive structuring processes. Exercises and trial problems could be presented in ways which demand from the students that they organize or structure material for themselves, rather than simply re-applying routine solutions. Finally, students could be confronted with material that has not been pre-digested for them, such as original scientific publications. They could then be asked to say in their own words what principles have been enunciated in this literature, and what they think about them.

Such approaches to distance education material would require the investment of considerable energy and time on the part of distance educators. They have to deal with a number of special problems which scarcely arise in face-to-face education, and to do this with the help of the limited means which they have at their disposal. Nonetheless, achieving such goals is a challenge for distance educators which would lead to a recognition of distance learning as a legitimate, even equally valuable, form of education, and not to a devaluation of it as basically a substitute for 'genuine', face-to-face education. It should not be automatically assumed that face-to-face teachers are more efficient than distance educators until the matter has been adequately investigated.

#### References

- Cropley, A.J. (1978) *Lifelong education: a psychological analysis*. Oxford: Pergamon.
- Cropley, A.J. and Kahl, T.N. (1983) Distance education and distance learning: Some psychological considerations. *Distance Education*, 4, 27—39.
- Heinze, T. (1983) The social and psychological milieu of distance students. *Distance Education*, 4, 53—62.
- Möllers-Oberrück, G. (1984) Studieninteressenten 1982 samt Tabellen zu 1981. Hagen: Fernuniversität (ZIFF Papiere, No. 51).