Independent Learning by Implementing Contract Learning in a Clinical Context

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Abstract

This Action Learning Project evaluated the implementation of learning contracts in a clinical context with a group of students in their third year of study in the pre-registration Bachelor of Nursing programme. The learning contract was used as a learning tool during students' clinical placement in Mental Health Nursing. Data regarding the attitudes of students and nurse instructors towards the use of learning contracts were collected from questionnaires and interviews. Results showed that both students and clinical instructors agreed that there was an increase in students' autonomy and control of learning when using learning contracts. There was also an increase in the motivation to learn and the sharing of experiences between students and nurse instructors. The findings of the questionnaires and the interviews supported each other. However, the lack of experience of using learning contracts, and the limited time in the clinical areas, imposed difficulties on both students and nurse instructors. Despite the limitations, contract learning is considered to be beneficial to students' learning and has the potential to be used in clinical learning situations.

Introduction

Conventional teaching tends to be didactic, with the teacher controlling the learning and students playing a passive role in the process. Of note too, is that the learning is bound by the curriculum. In nursing education, it is increasingly recognised that there is a need to shift from didactic teaching to interactive learning. Students need to develop both motivation and ability to meet individual learning needs if they are to be prepared as independent practitioners of the future. Biggs (1989) suggests that teaching can be enhanced by an interactive approach in which students are involved in learning as much as possible. Martin and Balla (1990) also maintain that an active student role indicates a higher conception of learning.

The pre-registration Bachelor of Nursing degree programme offered by the universities in Hong Kong aims to produce independent and competent nurses who are committed to life-long learning and continuing professional development. Since nursing is a practice profession, learning in clinical areas is an important part of the programme. During the clinical placement, learning objectives are set by lecturers, and students are taught and supervised by clinical instructors. From experience, it has been observed that there are limitations related to learning and teaching in clinical placement. Instructors encounter difficulties when trying to meet students' individualised needs. Some students are very dependent on the instructor's guidance and some have difficulties in integrating theories with practice. Strategies, therefore, must be employed to maximise teaching and learning in clinical placement.

Koh (1996), Mazhindu (1990) and Whittaker (1984) suggest that a learning contract can be an effective strategy to address the limitations mentioned above. A learning contract is defined as a written agreement between teacher and student which makes explicit what a learner will do to achieve specified learning outcomes (Richardson, 1987). Learning contracts have been used as a

teaching and learning strategy for both undergraduate and graduate nursing students in many countries, being considered useful for individualising learning, promoting independence and developing strategies which could facilitate lifelong learning. Contract learning places emphasis on learners' activities, teacher-learner interaction and subject matter, and implicitly promotes teaching and learning by discovery. As teachers are no longer expected to control learning, self-directed learning is encouraged through a negotiated learning contract (Greenwood & n'ha Winifreyda, 1995; Mazhindu, 1990; and Gibbon, 1989).

Studies confirm that the use of learning contracts have a positive impact on students' learning. Donaldson (1992) used learning contracts in medical/surgical wards with a group of Registered General Nurse (RGN) students, reporting that students valued highly being treated as adults and given control over their learning. They felt that they had learned more by using a learning contract. Gibbon (1989) implemented contract learning in a clinical context concluding that students become more independent and self-directed. Contract learning has also positively affected students' motivation and confidence in meeting their own learning needs.

It has been demonstrated too, that by using learning contracts, clinical instructors can facilitate in students the ability to relate what is taught in the classroom to what is happening in the clinical area. The resulting increased involvement by students promotes close communication between themselves, the clinical supervisor and clinical staff. This makes the integration of theory and practice more effective and meaningful. Furthermore, information within the learning contract can demonstrate the progress made by the students and help identify additional practices which they need to learn. It can also be used to facilitate critical reflection of selected practices. Contract learning has the flexibility to allow tailoring of the learning of clinical skills according to the clinical situation (Koh, 1996; Greenwood, & n'ha Winifreyda, 1995; Donaldson, 1992; Crane, 1991; Mazhindu, 1990; and Norton, 1989).

Gibbon (1989) suggested that learning becomes more individualised and self-directed with the use of learning contracts, the role of the teacher changing from a knowledge transmitter to that of a facilitator of students' learning. Knowles (1986) also maintains that learning contracts are expected to bring about a shift in the teaching role from that of a didactic transmitter of content and controller of learners, to that of a facilitator of self-directed learning and content resource. Such a shift is important in nursing education, as nursing students need to develop into independent and competent practitioners. They should be committed to specific areas of nursing practice that they choose to learn. It is envisaged that more educational benefits could be gained through formalising the use of learning contracts. Use of learning contracts is new in Hong Kong, it is therefore worth studying and evaluating their use.

Aim of the Study

The aim of this study is to evaluate the use of learning contracts in the clinical placement of the subject Mental Health Nursing in the pre-registration Bachelor of Nursing degree programme in a university in Hong Kong.

Methodology

This study introduced contract learning in the clinical placement of Mental Health Nursing, which is one of the major subjects of the Bachelor of Nursing degree programme.

An action research approach was used in the study. The researchers participated in developing the course content and teaching strategies, teaching the theory part of the subject, planning and co-ordinating the clinical placement, and developing the system of contract learning. They then

evaluated the effectiveness of this learning strategy. An action research approach was considered appropriate in this study, since such an approach enabled researchers to be active participants on the experience, preparing and facilitating the students, and at the same time collecting data (Donaldson, 1992).

Participants of the study were year three students (n=47) in the Bachelor of Nursing programme, and the clinical instructors (n=4) supervising students in the clinical placement. The cycle of this action research consisted of three phases: planning and contract making; implementing the learning contracts; and evaluating the effectiveness of contract learning

Planning and Contract Making

Students have 42 hours' theoretical input and 18 days clinical placement in the subject Mental Health Nursing. The clinical placement for the subject was planned in order to include experience related to the content of the curriculum. The planned placement offered clinical experiences in the acute admission ward and the rehabilitation ward. Students were supervised and assessed by a nurse instructor in their clinical placement. The objectives for clinical placement covered the essential topics but in broad terms. Examples of the learning objectives were to:

- participate in mental health promotion activities in mental health settings or in the community;
- demonstrate skills in establishing therapeutic relationships with clients and their significant others;
- assess the functional health pattern of clients relating to mental functions;
- plan, implement and evaluate care for clients with various mental health problems;
- function as a member in the multidisciplinary mental health care team in providing care for clients.

In this study flexibility was allowed for students to develop more specific learning objectives. Since the use of learning contracts was unfamiliar to both nurse instructors and students, a briefing session was conducted for the clinical instructors before the placement. The learning contract was also introduced and explained to the students. They were informed of the study and sample contracts were given for reference.

The guidelines for drawing up the learning contract followed that suggested by McAllister (1996). They included identifying individual learning objectives in line with the general objectives of this placement, proposing the learning strategies and resources, identifying evidence of accomplishment and the means for evaluating their performance. The format of the learning contract is presented in Figure 1.

Students were to set their own learning objectives and discuss their learning contracts with their clinical instructors a week before the placement. The objectives to be achieved were negotiated and agreed between students and their clinical instructors. The learning contract was finalised at the end of the first week of the clinical placement. An example of a learning contract from a student is presented in Figure 2.

Figure 1: The format of the learning contract

Name of clinical instructor:

Name of student:

Period:

Unit/ward:

Learning Contract

Learning objectives	Learning resources and strategies	Evidence of accomplishment	Means of validating evidence

Figure 2: Example of a student's learning contract

Name of clinical instructor

Name of student:

Period:

Unit/ward:

Learning Contract

Learning objectives	Learning resources and strategies	Evidence of accomplishment	Means of validating evidence
Demonstrate skills in caring for patient under close observation.	Discuss with nurse specialist. Read hospital guidelines. Observe ward practice.	Describe the protocol for care of patient under close observation in post-conference, and give examples to illustrate the principles.	Discuss with instructor and peers. Answer questions from instructor and peers.
Demonstrate ability to teaching patients about the side effects of psychotropic drugs.	Read 3 journal articles related to the topic. Observe staff member conducting teaching.	Conduct a teaching session for a group (3-4) of patients.	Observe by instructor during teaching session.
Demonstrate skills in caring for patient before and after electro-convulsivetherapy (ECT).	Read textbook and hospital protocol; Participate in the ECT procedure. Observe staff performance. Discuss with nurse specialist.	Perform care for one patient before and after ECT.	Observe by instructor and nurse specialist.

Implementing the Learning Contracts

During the clinical placement structured activities included daily pre- and post-clinical conferences, routine activities of the respective clinical areas, and specific procedures e.g. group therapy sessions. With the facilitation of their clinical instructors, students implemented the learning contracts during the structured activities or specially arranged clinical situations. Clinical instructors regularly discussed the learning progress with the students. Students were expected to share their learning in the post-clinical conference at the end of each clinical day. At

the midpoint and at the end of the placement, the clinical instructors assessed the students according to the criteria stated in the individual learning contract.

Evaluating the Effectiveness of Contract Learning

At the end of the placement, the effectiveness of contract learning was assessed using the questionnaire: Perceived Benefits of Contract Learning, developed by Cheng (1997) to obtain students' views on the benefits of contract learning. The questionnaire consisted of 22 items divided into four sub-scales:

- ability to use the learning contract;
- effects on student autonomy in learning;
- effects on student motivation in learning;
- effects on applying theory to practice.

The internal consistency of the sub-scales ranged from 0.74 to .09 (Cheng, 1997). Students were asked to rate each item in the questionnaire from 1 to 5 (1=strongly agree, 2=agree, 3=neutral, 4=disagree, 5=strongly disagree). Descriptive statistics were used to analyse the data. The mean and standard deviation of each item was calculated. A mean score of 3 or below was considered to indicate a more positive view and a mean score above 3 indicated a more negative opinion.

Semi-structured interviews were conducted by a research assistant for all the clinical instructors and 20% of the students (n=9) who were randomly selected. The interviews were to obtain in-depth feedback about the benefits and difficulties of using contract learning in clinical learning. The interviews were tape-recorded and transcribed. Themes were identified by content analysis.

Results

Questionnaire Survey

44 students returned the questionnaire. Figure 3 illustrates the mean and standard deviation of each item.

The mean of the items ranged form 1.88 to 2.84. Students generally were positive towards the use of the learning contract. They agreed that the learning contract could help to increase students' autonomy and motivation to learn. The application of theory to practice was improved. They regarded the support they had as adequate and felt that they could use learning contracts with confidence.

Figure 3: The mean and standard deviation (SD) of each item in the questionnaire

	Mean	SD
The learning contract was easy to make	2.70	.87
It is easy to identify the appropriate objectives, resources, evidence of accomplishment, and assessment criteria	2.70	.73
I can implement what I planned in the learning contract	2.47	.84
It is easy to access the relevant resources	2.50	.87
The instruction about using the learning contract is adequate	2.25	.89
The clinical supervisor is supportive towards this process	1.88	.78
Sufficient resources are provided by the university	2.63	.80
Sufficient resources are provided by the ward	2.59	.92
I can learn deeply and permanently from the learning contract	2.72	.81
The learning contract can help me relate knowledge to practice	2.31	.88
The learning contract can help me apply knowledge to practice	2.45	.79
The learning contract can help me improve my clinical skills	2.75	.96
The learning contract has given me more confidence in my abilities	2.70	.87
The learning contract increases my responsibility in the subject	2.25	.91
Use of the learning contract makes learning more self-directed	2.20	.92
The learning contract increases my control of learning	2.36	.80
The learning contract increases my autonomy of learning	2.45	.81
The learning contract increases my motivation to learn	2.40	.87
I enjoy this kind of learning method	2.84	.91
The learning contract meets my learning needs	2.56	.87
I prefer to learn this way rather than the conventional way	2.68	.85
The learning contract increases my interest in the subject	2.65	.88

Interviews

As a result of a content analysis of the data from the interviews, themes were identified that described the benefits and difficulties of using learning contracts. The benefits included increased autonomy, increased motivation, increased individualised learning, increased sharing, and increased learning effectiveness. Difficulties included: limited time in clinical placement, lack of knowledge of contract learning, and students' learning attitudes. The following presents examples of extracts of the subjects' interviews illustrating the development of the themes.

Benefits

- Increased autonomy.

Many students agreed that the use of learning contracts could increase their autonomy and control over learning as is indicated in the following comments.

> Student: This was the first time we used learning contracts. I set the learning objectives by myself, not by the teacher. I think I can learn what I would like to learn. And ... that's good, I have more control over my learning.
>
> Student: I think we are adults. We should learn by ourselves. The learning contract is just like a guide for us. I set the objectives and I have to fulfil it. I can do what I plan to do. I have more autonomy and I can be more active in learning.

Clinical instructors also agreed that the learning contract could improve students' autonomy and self-directed learning.

> Instructor: Students have more control over their learning. Learning contracts emphasised self-directed learning. Learning becomes more meaningful that way.
>
> Instructor: Students have chances to design their learning activities. They have more autonomy to explore their own interest.

- Increased students' motivation

Students and instructors all commented that the learning contract increased students' motivation to learn. Instructors also mentioned that it increased teachers' motivation as well.

> Student: In the learning contract, we set objectives on the areas that we want to learn. Because these are what we would like to learn, this can increase our motivation.
>
> Instructor: I believe that the use of learning contracts provides freedom for them to learn what they are interested in. This can motivate their learning.
>
> Instructor: When students achieved their objectives, I was satisfied because I acted as a facilitator to guide the students to learn. It increases my motivation to teach as well.

- Increased individualised learning

Nurse instructors agreed that since each student develops their own contract, contract learning can help to satisfy students' individual learning needs. This is demonstrated in the following quotations.

> Instructor: Through the learning contract, they could identify what they are interested in. We as teacher then tried to facilitate their learning. Learning can be more individualised as students have different learning needs.
>
> Instructor: Students have different learning needs. From the learning contract for example, I knew student A would like to learn side effects of drugs, whereas student B would like to learn how to conduct a group sessions. According to the learning objective, I can help student A to learn more about drugs and provide student B with chance to observe a group session. I can cater more for student's individual learning needs.

- Increased sharing.

Both students and instructors agreed that the sharing between instructors and students, and students and students increased in this study.

> Student: When we achieved our objective, we would discuss our experience in the post-conference. Actually, I like the part of discussion … because classmates have different objectives, we can share our knowledge.

> Student: The interaction with instructors increased through the use of learning contracts because they had to give us feedback and monitor our progress frequently.
>
> Instructor: Students discussed their learning objectives in the post-clinical conference. Though their learning contracts were different, others would have questions related to the topic ... I felt that they were quite interested in other classmates' learning objectives. It is a good sharing experience.

- Increased learning effectiveness.

Students and instructors agreed that the effectiveness of learning increased by using learning contracts.

> Student: The use of the learning contract enhanced my initiative. It provided a direction for me to learn according to what I am interested in. This helped learning to be more effective.
>
> Instructor: When a student comes to a clinical area, they have no experience in that area. Through the learning contract we know their learning needs. We then can try to facilitate their learning. This makes learning more effective.
>
> Instructor: Through the learning contract, I know in advance what students would like to know. I can identify if there are opportunities and resources in the ward for them to learn. Learning becomes more effective this way. If I did not know what they would like to learn or could not know it in advance, with so many students in the ward it would be difficult for me to offer learning opportunities to them in what they are interested in.

Difficulties

Despite the benefits, some difficulties in implementing learning contracts were identified.

- Limited time in placement

Instructors commented they found that when using learning contracts they spent more time with each student, and that it was difficult to supervise so many students given that the time in the clinical placement was short.

> Instructor: I think the time for preparing their learning contracts and the time spent in ward for achieving the objectives is too short ... Also, we have to spend relatively more time with each student to discuss their learning objectives and their progress. As we have to supervise about 14 students each, time is very tight.

Students also agreed that time was a factor which affected their learning.

> Student: Actually some of us were unable to fulfil the learning contract because we only had 18 days placement. It depended greatly on the ward situation at that time whether there were learning opportunities for us to learn these things.

- Lack of knowledge about contract learning

Lack of experience and knowledge about using learning contracts was a common theme expressed by the students.

> Student: There were many uncertainties at the beginning. We were very anxious about this contract learning. Since we were required to set the objectives a week before the clinical placement we were not sure what should be included in the learning contract. We did not know whether we were going in the right direction.

> Student: At first, it was quite difficult to draw up the contract as I received not much information on how to do it. I found I didn't know what I should put down in the contract ...
>
> Instructor: There were a lot of uncertainties in students and they were very anxious. Some of them did not know how to write behavioural objectives. Some were confused about the difference between the column of evidence of accomplishment and means of validating experience. They did not know what was the right kind of information to put down.

- Students' learning attitude

Since contract learning placed much emphasis on self-directed learning, students and instructors agreed that if students were not that motivated, it would affect the learning outcome.

> Student: At first I was not that motivated to participate in this contract learning. I set the objectives and put the thing aside. I had difficulties in motivating myself because it was not related to formal assessment. This was my problem.
>
> Student: Since the learning contract was not part of the formal assessment, we tended to put less effort into it. It really depended on students' motivation whether the learning contract could be successfully used in clinical placement
>
> Instructor: The outcome of the learning contract depended on the students' learning attitude. If students do not see their responsibility towards their learning, it is difficult to use the learning contract as a method of learning, especially since our students are so used to pedagogic learning.

Discussion

The results of both the questionnaire survey and interviews confirmed that students have a greater sense of autonomy and control when using a learning contract. Learning is more individualised, there is an increase in motivation and sharing in learning. Both students and clinical instructors agreed that these were the strengths of the learning contract.

Literature also supports these findings. Rogers (1983) agrees that learning contracts allow students freedom to learn whatever they are interested in within the boundaries and/or constraints of course requirements. It allows the student to negotiate the whole process of study including time, place, length, range and depth of study. There is an increase in students' autonomy and control in learning, regarded as important in nursing professional education. Since one of the aims of the Bachelor of Nursing programme is to develop independent nurses who are committed to life-long learning, students need to develop the ability to meet their own learning needs. It is hoped that the use of learning contracts will promote such ability.

Students and instructors also perceived an increased motivation to learn. The use of contract learning can develop an intrinsic will in students to learn. Students learn because they are interested and want to acquire that knowledge. McAllister (1996) in her study also found that voluntary, enthusiastic learning appears to be promoted when using contracts. It is considered important for the development of the student as a professional nurse. McAllister maintained that the use of contract learning is conducive to life-long learning. It promotes characteristics of a professional nurse who is self-directed, responsible, autonomous and able to identify his/her own learning needs, which is the aim of university education for nurses.

This study also found that contract learning promotes interaction between student and teacher, and student and student, with an increased sense of sharing between participants. Nurse instructors commented that they acted as facilitators of students' learning. Students learnt not

only from teachers but also from peers, with discussion and feedback being more frequent when compared with the traditional way of learning. Richardson (1987) stated that in using learning contracts, there is a reorientation of the teaching role from the traditional dissemination of information towards a facilitating and advising role. Learning is more student-centred since the contract is designed to fit each student's unique needs. Nurse instructors in this study acted as resource persons throughout the process, assisting rather than directing the students in their learning. As demonstrated in the data, nurse instructors could derive satisfaction from helping students learn about what really interested them. Moreover, students could learn what they would like to learn not only from teachers, but also from peers. It facilitated satisfaction in both groups. Richardson's view, that the use of learning contracts improved motivation in both learning and teaching, was supported by this study.

Apart from the benefits mentioned by the interviewees, the researchers observed that learning became more creative when using learning contracts. For example, students used a variety of learning resources and strategies to learn, such as consulting clinical experts, searching nursing literature, reading hospital policy, standards, procedure guidelines, or participating in activities with clinicians. The use of learning contracts allowed room for students to be more creative in their learning strategies. Thus learning became more interesting with the result that they were motivated to learn.

In the study, difficulties in using learning contracts were also identified. Students and instructors reiterated that insufficient time, insufficient knowledge, and students' learning attitudes affected the outcome of the learning. Self-directed learning is a new experience for students. They were required to develop new ways of learning, such as setting their own learning objectives, identifying learning resources and strategies and deciding on a method of evaluation. In the past, all of these were the responsibility of teachers. The use of learning contracts shifted the emphasis of learning from being teacher-directed to being student-directed. Students admitted they experienced many uncertainties about contract learning which in turn created anxiety. Richardson (1987) in her study also found that students who have been conditioned to traditional teaching strategies and finite knowledge courses, where content is delineated, may experience anxiety when required to perform something new, such as contract learning. Student anxiety is understandable.

Anxiety about using learning contracts may also be due to inadequate knowledge with insufficient information having been given in the briefing session. Students and nurse instructors commented that students had little knowledge about using learning contracts and they were confused. Martens (1981) believed that contract formats could be confusing and students using them for the first time might find, for example, difficulty in differentiating between the two sections 'Evidence of accomplishment' and 'Means of validating evidence'. The former section asks students to list activities that would convince them and others that their objectives were achieved. The latter requires the student to specify how that evidence was to be assessed. Thus, one section refers to outcome and the other refers to process. However, in practice, the distinction was not clear. There is, therefore, room for improvement in the format of the contract.

The issue of time limitation was identified as a problem by both students and clinical instructors. Compared with traditional teaching strategies, contract negotiation and consultation are time consuming activities, particularly when first implemented, as was stated by Richardson (1987). Frequently, one to one consultations with students, especially while they were developing the content of their contract, were necessary. There is, therefore, greater teacher workload associated with contract learning.

Bouchard and Steels (1980) recommended a maximum of 12 students per teacher for contract learning to be effective. In this study, the ratio of students to teacher was 14:1. Although this was a little higher than that recommended by Bouchard and Steels, it does not necessarily mean

that optimal learning is not possible. If instructors are more experienced in the use of learning contracts, the learning process might be improved. According to the instructors, there were times when students identified too many learning objectives. Since it was a new experience for both students and instructors, it was important for instructors to develop skills in guiding students to appreciate the complexity of their objectives and to set achievable goals within the available time frame.

Instructors commented that the students' learning attitudes influenced the effectiveness of contract learning. The success of contract learning, in fact, depends very much on the students' own enthusiasm and commitment to the agreement. It was clear that students have different experiences and are at different stages of readiness for autonomous learning. Some were not that ready and they were anxious. To assist students overcome their anxiety and to help students sustain interest and commitment to the contract, Donaldson (1992) suggested that it is vital that teachers who are involved in facilitating contract learning should assist students to make the transition from teacher-centred to student-centred learning. This could be achieved by providing support and constant feedback.

Recommendations

As a result of the findings from this study, a number of recommendations are made to improve the use of learning contracts. They are as follows:

- more guidance be given to students to formulate the contract:
  - students using learning contracts for the first time must be able to feel that they can approach the clinical instructors for help if necessary;
  - a session to be conducted to help students write the contract since students need help to word their learning objectives;
- literature relating to learning contracts be given to students to enable them to understand better the application of learning contracts in nursing education;
- a workshop focusing on learning contracts be conducted for nurse instructors to prepare them for their role as facilitators;
- the format of the contract to be revised.
  It should be simplified to three columns - learning objectives, resources and strategies and criteria for evaluation, to reduce confusion in its use and make the contracting process simpler;
- time to be given for students to design the learning contract. Learning contracts should be finalised after students have experienced at least one clinical session, so that they can gain a better understanding of the learning opportunities available in the clinical unit and thus set realistic learning activities and objectives.

Implications

The results of this study have implications for students' learning strategies in the clinical area since it has been demonstrated that clinical learning has been enhanced as a result of students' increased motivation and autonomy. In the Bachelor of Nursing programme, students must spend about 1,800 hours in clinical areas during their 4-year education. The study evaluated the process of using learning contracts in mental health clinical nursing and focused on one group of students. The findings suggest that there are benefits to be obtained by utilising learning contracts in the teaching strategies in other clinical areas, e.g. medical and surgical units. Further studies should be implemented to evaluate the impact of learning contracts on different groups of students and in different learning areas. In the clinical settings, the situations that students encounter are diverse, giving scope for students to be more flexible and creative in their own learning strategies,

and for the teacher to function as a facilitator rather than a knowledge giver. Apart from clinical learning, this teaching and learning strategy can also be applied in the classroom learning.

The learning contract in this study was used as a learning activity. The outcome of the learning was not included as a formal assessment because contract learning is a new learning strategy in the Department of Nursing in the university. This might have resulted in the students putting less effort into the learning activity; however, the researchers hoped that students would develop an intrinsic will to learn rather than depending on external control. If learning contracts are used as formal assessments, then to avoid ambiguity, it is necessary to agree the criteria to be used for the achievement of specific grades. Apart from teachers' assessments, students' self-assessments and peer assessments may have to be taken into account. It is a complex process that needs careful consideration.

The data used in the study were collected from self-completed questionnaires and interviews which focused on subjects' perceptions. One could argue that the ultimate indicator for the effectiveness of students' learning should be the students' clinical competence, not just their motivation and attitude towards learning. This study did not compare the clinical competence of conventional clinical learning methods with contract learning. This might, therefore, be regarded as a limitation of the study. Rating of clinical competency could be attempted in a future study in order to gain a better understanding of the effects of learning contracts. To ascertain the impact of contract learning, studies could be conducted to compare the differences in performance between students using learning contracts and conventional clinical learning.

Conclusion

This study has described the implementation of learning contracts in a clinical context. A questionnaire, survey and interviews were used to collect data. It was found that the use of learning contracts increased students' autonomy and motivation to learn. There was an increase in sharing among students and instructors, and an improvement in the effectiveness of learning. These benefits were perceived by both the students and clinical instructors. Judging from these benefits, learning contracts are recommended as a tool for use in the clinical learning setting. However, there were also difficulties raised by informants of this study. To maximise the use of learning contracts in clinical settings, recommendations have been made for future utilisation of learning contracts in such a learning situation.

Acknowledgements

The authors would like to thank the Action Learning Project fund for supporting this study. Sincere thanks are given also to the nurse instructors and the students who contributed to this study.

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