

Chapter 6

A CONCEPTUAL FRAMEWORK FOR GROUP CONSTITUTION FOR SMALL GROUP LEARNING IN THE FIELD OF INFORMATION TECHNOLOGY

No man can establish title to an idea – at the most he can claim possession. The stream of thought that irrigates the mind of each of us is a confluent of the intellectual river that drains the whole of the living universe.

Maurice Valency, introduction to “*Jean Giraudoux: Four Plays*” [1958]

Introduction

In the previous chapter the results of the five case studies (discussed in Chapter 4) were reviewed and interpreted from three perspectives, namely: Habermas’ knowledge interests, hermeneutics, and Giddens’ “*consequences of contemporary modernity*” theory.

In this chapter a conceptual framework of group constitution for small group learning in the field of information technology will be developed. In order to achieve this, a further round of interpretation will be undertaken, using the set of principles for interpretive studies as proposed by Klein and Myers [1999].

The two processes, namely: using the three “lenses” as first “pass” of interpretation, and a second “pass” of interpretation (the interpretation of the findings of the first “pass”) using the principles of interpretive research, are graphically depicted in *Figure 31*.

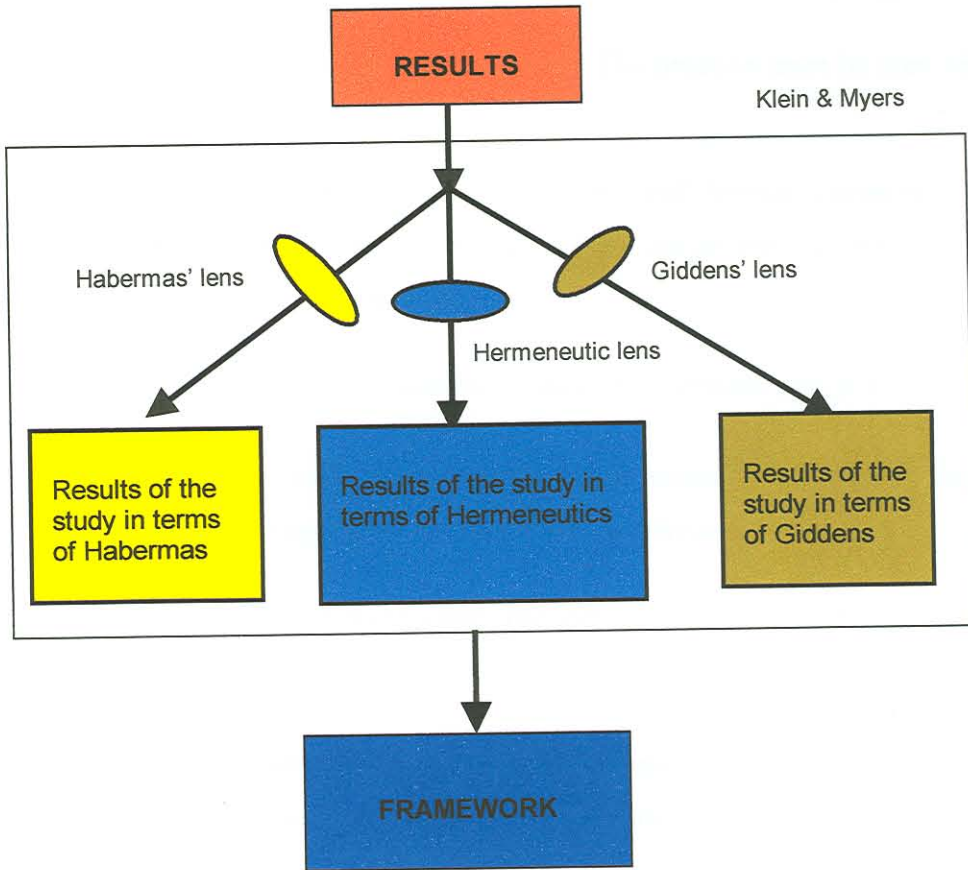


FIGURE 31: Using Klein and Myers' principles to derive a conceptual framework

The **principles** involved in the Klein and Myers approach are as follows:

The background to the interpretive perspective

The principles for evaluating interpretive field studies as proposed by Klein and Myers [1999] are:

1. **The fundamental principle of the hermeneutic circle.** This principle suggests that understanding can be achieved through an iteration process where the meaning of the whole and its parts are considered interdependently.

This process of human understanding is fundamental to all the other principles.

2. **The principle of contextualisation.** The situation must be seen within its context.

This requires critical reflection on the social and historical background of the research setting, so that the intended audience can see how the current situation under investigation emerged.

3. **The principle of interaction between researchers and the subjects**

... requires critical reflection on how the research materials (or “data”) were socially constructed through interaction between the researcher and participants.

4. **The principle of abstraction and generalisation.** Principles 1 and 2 should be kept in mind when interpreting the results of the research and

...requires relating the ideographic details revealed by the data interpretation through the application of principles 1 and 2 to theoretical, general concepts that describe the nature of human understanding and social action.

5. **The principle of dialogical reasoning.** Sensitivity is required to identify contradictions between preconceptions and actual findings –

...guiding ... the actual findings with subsequent cycles of revision.

6. **The principle of multiple interpretations.** Participants interpret similar incidents differently, thus it –

...requires sensitivity to possible differences in interpretations.

7. **The principle of suspicion.** Researchers need to be aware of bias and the twisting of the “truth” and

...systematic “distortions” in the narratives collected from the participants [Klein & Myers, 1999].

These principles, as described by Klein and Myers, were used to evaluate the results achieved in a first attempt at deriving a framework (see *Figure 32*), and will aid the further refinement thereof.

Using the Klein and Myers approach to develop a preliminary framework

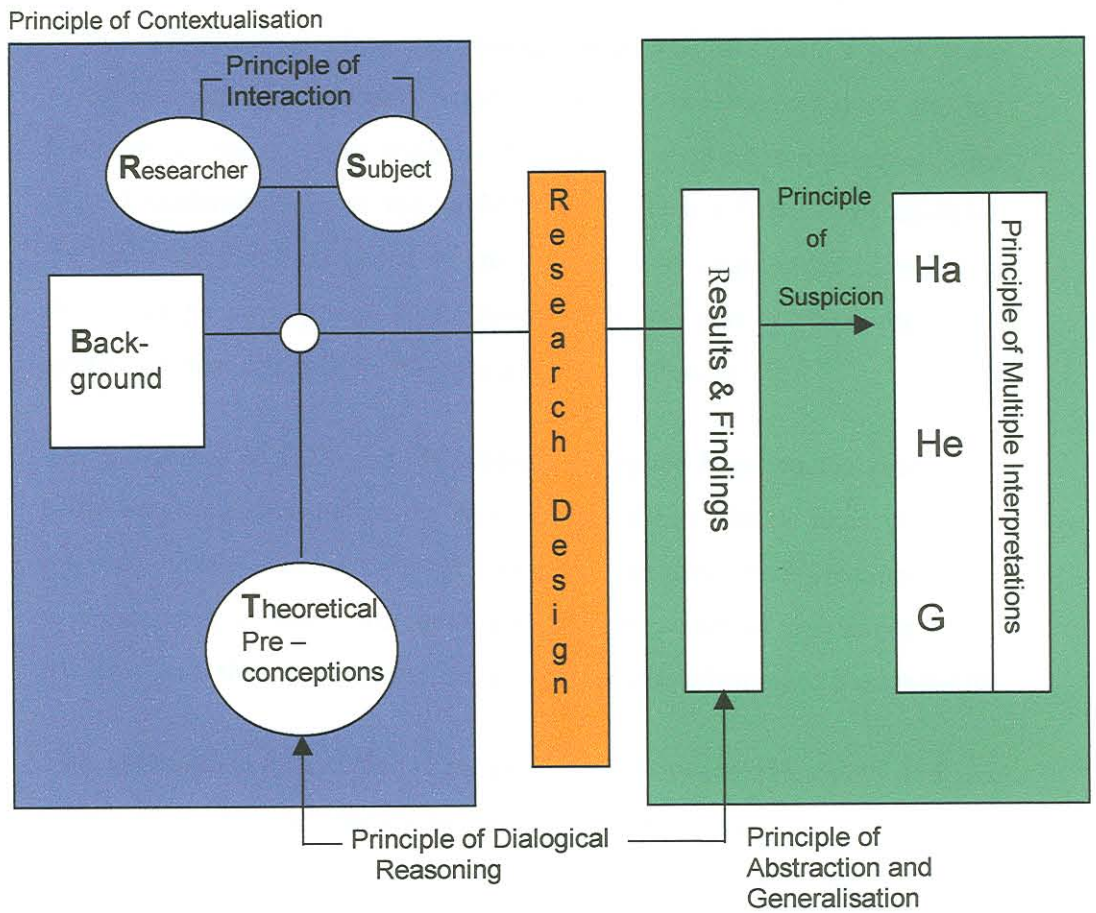


FIGURE 32: Towards a framework for group constitution for small group learning in the field of information technology

The framework above was derived (using Klein and Meyers) as follows:

The principle of contextualisation – puts the research problem into context. The context includes the researcher, the subject and the background to the problem as well as the theoretical preconceptions of the researcher. The researcher in this case is the lecturer, and the subject is the students at UWC. The background to the problem is that these students are from academically disadvantaged backgrounds, and they have a poor grasp of the language of instruction, namely English, as the majority speak another language at home. The students thus resort to verbatim studying with limited understanding of the underlying concepts of the study material. Furthermore the throughput of these students is unacceptably low. The theoretical preconceptions of the researcher forms part of this context as it guides the research and the interpretation of the results.

The **principle of dialogical reasoning** is applied between the theoretical preconceptions that guided the research and the results or findings of the research. But as can be seen (in *Figure 32*), the theoretical preconceptions was the result of the researcher's social construction of the subjects (the students) and their background (an academically disadvantaged background).

The interaction principle. The interaction between researcher and the subject of the research cannot be ignored. Thus the researcher needs to be sensitised to the “subjectivity” of interpretation. For example during interviews, the questions posed can pre-empt the answers given. When interpreting results this must be kept in mind.

Several interpretations, namely, Habermas' knowledge interests, Giddens' “consequences of contemporary modernity” and hermeneutics, represent the **principle of multiple interpretations**. This allows the researcher to examine, confront and reconcile contradictions that can arise from using different viewpoints to interpret the research findings.

The principle of suspicion as indicated can reveal distortions in the interpretation of the research results. The results, “*have a life of its own*”, and using the interpretive “lenses”, this “*life of its own*”, as well as “biases”, can be determined.

The principle of abstraction and generalisation is applied “over” the results and findings as well as the attempt to view the research from several perspectives. Generalisation and abstraction, in the tradition of grounded theory, will allow common and prominent themes to emerge.

The hermeneutic circle principle implies that understanding is achieved by “*iterating between considering the interdependent meaning of the parts and the whole that they form*” [Klein & Myers, 1999: Figure 1]. With each “pass” (of interpretation) the understanding of the research problem and the findings of the research become more complete. This is indeed a cyclical process; the problem is revisited several times and from several perspectives.

Critique

The conceptual model depicted in *Figure 32*, when considered closely, does not represent a conceptual model for *understanding* group constitution for small group learning in the field of information technology but rather a conceptual model for understanding the *research process* that has taken place.

In an attempt to refine the rough framework that has been developed in *Figure 32*, consider an alternative as depicted in *Figure 33*. The right square depicts the **Principle of Abstraction and Generalisation** applied to the results and findings of the research as well as the results of the first “pass” of multiple interpretations of the findings. This subset of *Figure 33* will now be considered separately and the Principle of Abstraction and Generalisation will be used as an “abstraction and generalisation tool” to derive a conceptual framework for *understanding* group constitution for small group learning in the field of information technology.

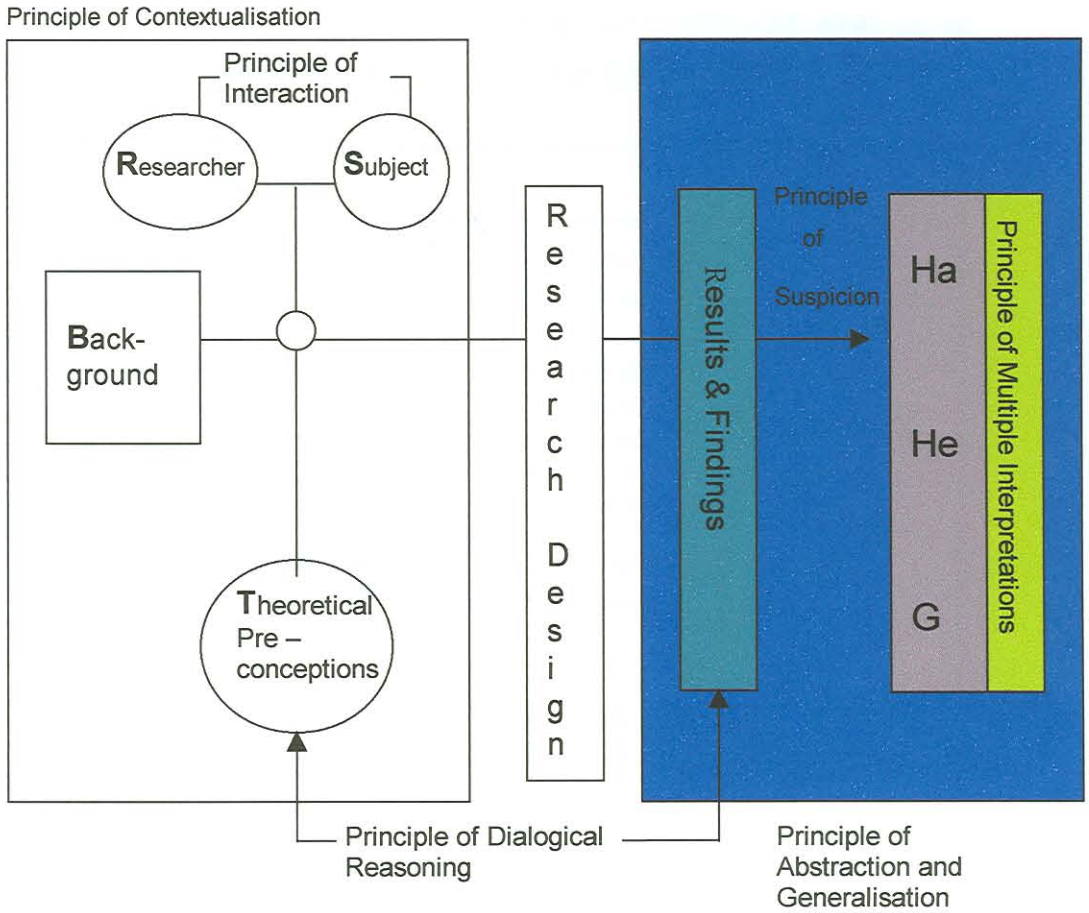


FIGURE 33: Towards a final framework for group constitution for small group learning in the field of information technology

The principle of abstraction and generalisation requires relating the factual details revealed by the data interpretation to general concepts that describe the nature of *human understanding* and *social action*. In the following table (Table 16) the concepts that describe the nature of human understanding and social action, are applied to both the student and the lecturer (in small group learning). Since both the researcher and subject (lecturer and student) are transformed after the implementation of this teaching strategy.

The impact of the intervention of group constitution for small group learning in the field of information technology is thus revealed:

	Student	Lecturer
Human	<p>Reflexive project of the self (Reflect on learning, and role within team)</p> <p>Technical Knowledge Interest (Learn about subject, improve academic achievement and apply knowledge learnt)</p>	<p>Institutional Reflexivity (Chronic revision of teaching methods)</p> <p>Technical Knowledge Interest (Lecturer has knowledge about subject, cooperative learning and teamwork, but learns about group development and applies this new knowledge gained.)</p>
Social Action	<p>Disembedding Mechanism (Transformed from individual to team member, tasks/study material previously "linear" now mind maps)</p> <p>New Trust Systems (Must trust effectiveness of small group learning and trust team members)</p> <p>Separation of time and space (Students meet with lecturer virtually as well as with team members)</p> <p>Autonomisation (Students create their own understanding of the study material)</p> <p>Social construction, appropriation and enactment (of team roles as well as appropriation of tasks to be completed)</p> <p>Empower and emancipate</p> <p>Practical Knowledge Interest (Social consciousness and valuing diversity)</p>	<p>Disembedding Mechanism (From lecturer to facilitator)</p> <p>New Trust Systems (Trust that new role will not let him/her lose control)</p> <p>Separation of time and space (Virtual classroom has no time boundaries)</p> <p>Autonomisation (Lecturer is to accept the different interpretations of tasks set)</p> <p>Distanciation (Intended use of Belbin roles distanciated from original use, lecturer distanciated from traditional role)</p>

TABLE 16: A framework for understanding group constitution and small group learning in the field of information technology

In the traditional higher education teaching model the lecturer and student relationship can be described as follows:

Student		Lecturer
Human Understanding	Technical Knowledge Interest (Learn about subject and apply knowledge learnt)	Technical Knowledge Interest (Lecturer has knowledge about subject)

TABLE 17: Traditional lecturer-student relationship

If *Table 17* is compared to *Table 16*, it is noted that in *Table 17* the complete *social action* dimension as well as the reflexive project of the self and institutional reflexivity of the *human understanding* of the previous table (*Table 16*) are lacking. Compared to traditional higher education, small group learning thus adds a further dimension, namely a *social action* dimension, to the learning experience of the student as well as the lecturing/learning experience of the lecturer. Both student and lecturer (in the small group learning model) are compelled to reflect on their learning and teaching.

The framework for understanding group constitution for small group learning in the field of information technology developed and described in *Table 16* can be used to understand the various facets of this teaching methodology, as follows:

The impact on the student

Human understanding

Reflexive project of the self. In this model the student gets the opportunity to reflect on his/her learning. Memorising the study material is not an option as it is expected of the student to converse with their peers about the work, and that will not be possible without understanding the work. Furthermore,

the student comes to know his/her strengths and weaknesses and the role he or she can play within the team.

Technical knowledge interest. The student learns about the subject and how to apply the knowledge acquired. This method allows students to improve their academic achievement in the subject.

Social action

Disembedding mechanism. The student is transformed from an individual to a team member. Thus in the class situation he/she is not merely an individual who needs to pass a subject but he/she is a team member who will discuss the subject material with his/her team. It is thus important to pay attention and to deliver on time. Previously cramming was an option; now it is not, as students need to continuously know what is happening in class to be able to contribute to team discussions. The learning material that was traditionally “linear” and could be memorised is now related facts and concepts on a mind map that is not memorised but rather understood.

New trust systems. Students need to trust the effectiveness of small group learning and that it will achieve their individual needs. They also need to trust the team, that team members will share the work and that they will deliver on time. Furthermore students need to accept the responsibility of team tasks and be trustworthy team members.

Separation of time and space. It is possible to “meet” (virtually) with team members and the lecturer at all times via the Internet. Problems can be discussed without having to be at the same place at the same time. And problems can be any kind of problem, not necessarily only academic problems. The student thus feels that he or she is not merely a student that is studying a specific subject but is seen in totality by peers and the lecturer.

Autonomisation. Each student’s interpretation of his/her dominant team roles and his/her enactment of these roles will be unique and thus will “take

on a life of its own". Similarly tasks assigned to the teams will be interpreted from each team's perspective and thus "take on a life of their own".

Social construction, appropriation and enactment. To understand any work or material it must be appropriated and socially constructed by the learner. In the team situation appropriation is necessary before work can be discussed. Similarly the team roles need to be appropriated by the learner before these roles can be enacted.

Empower and emancipate. Students feel empowered and emancipated with this methodology. They are no longer totally dependent on the lecturer but feel that they can stand on their own two feet.

Practical knowledge interest. Students become more socially conscious when expected to function within a team. They learn to value diversity as they come to realise that each team role has some specific strength to contribute to the team.

The impact on the lecturer

Human understanding

Institutional reflexivity. It is important for the teacher/researcher to reflect on his/her teaching practices. Thus the lecturer needs to *be prepared* to chronically revise his/her teaching methods. Reflection alone will be of little use if the lecturer is not prepared to change his/her teaching methods.

Technical knowledge interest. The lecturer traditionally knows his/her subject but now needs to become knowledgeable about cooperative learning and teamwork. Furthermore he/she needs to be able to assist teams with conflict resolution and must be aware of how groups develop.

Social action

Disembedding mechanism. The lecturer now becomes a facilitator. Therefore in the facilitative mode he/she must be able to dispel fears the students may

have about work or the team, elicit student opinions, and value the students' contributions by not being overly critical but being supportive of their endeavours.

New trust systems. The lecturer must trust that he or she, in this new role of facilitator, will not lose control. He or she is now not the "holder" of all the information but rather the guide to the information and in this role will have to sometimes be able to say "I do not know".

Separation of time and space. In the virtual classroom (with no time boundaries) the lecturer must be prepared to be "available" at all times. Thus the lecturer is not able to limit access to him or herself and must be prepared to answer e-mailed questions at any time. The separation of time and space is beneficial for the student but not so much for the lecturer. The lecturer will thus need to adapt to this changed environment – this is indicated in *Figure 34* by positioning the "separation of time and space"-rectangle a bit more to the right.

Autonomisation. Students create their own understanding of tasks set by the lecturer. It could be interpreted in a way unintended by the lecturer "*taking on a life of its own*". With this teaching method the lecturer should be open to change, he/she should allow the students the freedom to interpret tasks from their perspective. He/she must thus be prepared to accept innovative or different interpretations of set tasks without feeling intimidated. Here again the lecturer will need to be flexible and will need to make substantial changes to his lecturing style – in *Figure 34* the "autonomisation"-rectangle is therefore positioned slightly more to the right.

Distanciation. It is thus clear that the lecturer is distanciated from his/her traditional role. Similarly the intended use of Belbin roles is distanciated from their original use, namely, to create effective teams in the workplace.

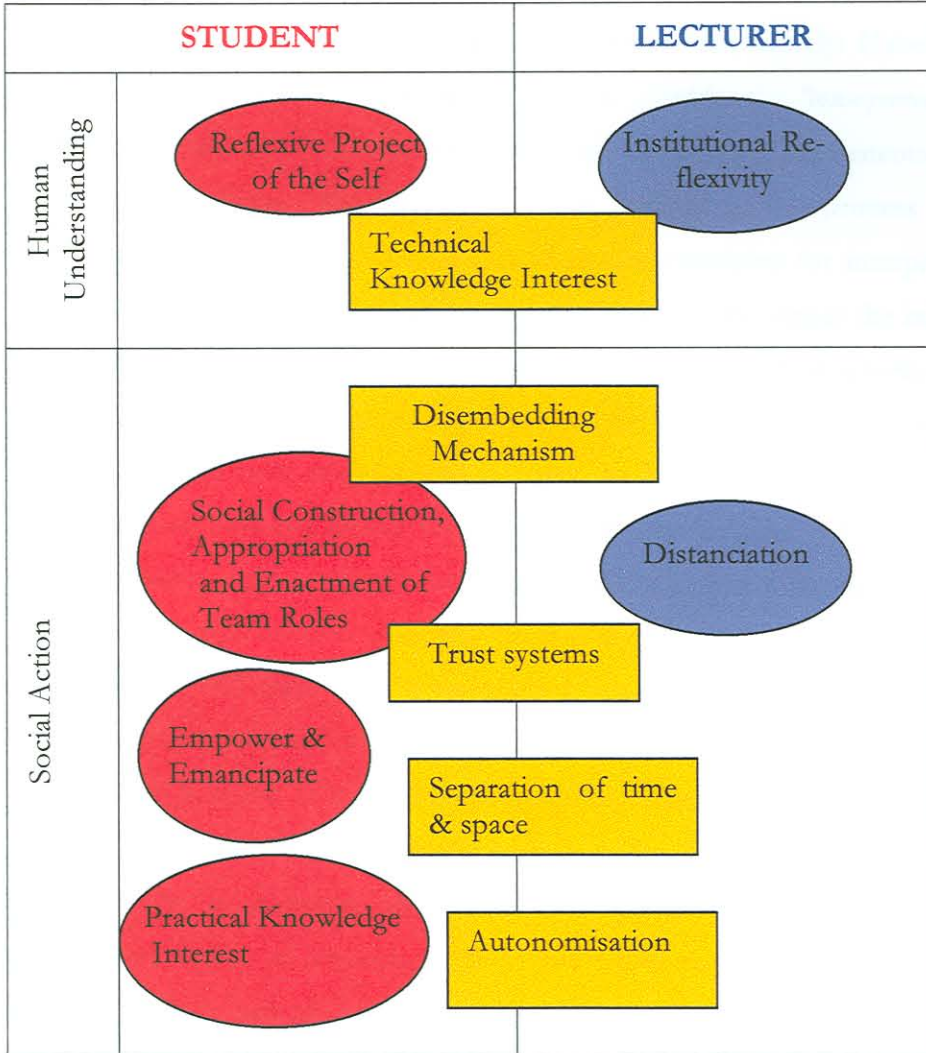


FIGURE 34: The final framework for understanding group constitution for small group learning in the field of information technology

The final version of the framework is depicted in *Figure 34*. In this figure, the ovals indicate the impact of “group constitution for small group learning” on the student (red) and lecturer (blue). The rectangles (yellow) indicate the impact that this methodology has on both students and lecturer.

Conclusion

In this chapter a framework was developed to understand group constitution for small group learning in the field of information technology. It was achieved by a cyclical process in which the original findings of the

case studies were interpreted using three perspectives, namely: Habermas' knowledge interests [Ngwenyama, 1991], Giddens' "consequences of contemporary modernity" theory [Barrett *et al.*, 1996] and hermeneutics as developed by Boland [Introna, 1997]. The findings of this process were then further interpreted using Klein and Myers' principles for interpretive studies [1999]. The framework depicted in *Figure 34* summarises the impact that group constitution for small group learning in the field of information technology will have on the learner as well as the lecturer. It can be used to demonstrate to both students and teachers the impact of the intervention. It shows how students should reflect more on their learning and their roles within a team, and how the lecturer should reflect on the teaching methods used and the effectiveness of teams. Socially students will develop new trust systems, they will learn how to negotiate a virtual world (separated in time and space) and they will construct and appropriate their own understanding of the study material. They will be empowered. The role of the lecturer will change and he or she will become a facilitator who gives his or her students the freedom to interpret tasks from their perspectives without feeling intimidated or out of control. With such a framework the lecturer will be able to prepare him or herself for the task ahead and it will furthermore allow him/her to prepare the class for this changed environment/approach. This could enhance the success of the approach.

Small group learning adds a social dimension to both the learning experience of the student and the facilitating experience of the lecturer. The developed framework will aid the lecturer and student in understanding the implications and benefits of the resultant transformation, if this teaching strategy is adopted.

In the next and final chapter of this thesis the findings of the study will be discussed and evaluated.