



Faculty of Arts and Education
Department of Pedagogy

Ingela Strandli Portfelt

The University; A Learning Organization?

An Illuminative Review Based on System Theory

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Abstract

There are voices in the research field suggesting that universities should become learning organisations in order to survive and become competitive in a complex environment. Two research aims have been raised. The first was concerned with in what way the organisational qualities of a university match the characteristics of a theoretical model of a learning organisation. The second was regarding in what way the organisational characteristics interact with one another in order to find out whether they support or hinder organisational learning. The selected case, Karlstad University, had an explicit vision to become a learning organisation.

An integrated theoretical model of a learning organisation was created, based on different perspectives. The university was divided into six subsystems (vision, grouping, communication, norm, sanctions and evaluation system) and method triangulation has been applied, based on interviews, documents and a survey. Data analysis has been focused on the identification of organisational characteristics of the case, in relation to the theoretical model. Furthermore, explorative factor analysis as well as system theory analyses has been applied.

The results show that out of six subsystems, four (communication, norm, sanctions and evaluation system) do not meet the characteristics in the theoretical model of a learning organisation. One subsystem (vision system) turned out to meet, as well as not to meet, the requirements in the theoretical model, while one - the grouping system - matches the requirements. The conclusion has been drawn that the university's inner life is not in harmony with the characteristics of the theoretical model of a learning organisation.

The results of the first system theory analysis was based on the results of the factor analysis and showed that there are reinforcing links within two groups of subsystems, and that the norm system is the only subsystem that has such links to all the other subsystems. The results of the second system theory analysis show that five out of six subsystems interact by reinforcing feedback loop, which hinder the university's ability to function as a learning organization. One subsystem turned out to have a balancing link to the other five subsystems. However, the subsystem's balancing effect on the other subsystems is mitigated by the strength of the reinforcing feedback loop between them. The results of the third system theoretic analysis revealed that all subsystems have one organisational characteristic, which do not meet the requirements in the theoretical model, in common. This result indicates that all subsystems have a reinforcing link to one another and together they balances the university's' ability to meet the requirements in the theoretical model. While the first and third analysis indicated that the norm system may have the greatest potential to influence the other subsystems and thereby the entire organisation, the second analysis indicated that the grouping system may have such potential. Therefore, the norm as well as grouping system has been concluded to be important points of leverage in order to improve the university's pre-requisites to function as a learning organisation.

Key words: *Higher education, university, academic institution, learning organisation, system theory, organisational culture, organisational structure*

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Introduction

Background

Universities in Europe have been challenged in many ways in recent decades, since their environment has become more complex (Clark, 1987; Dill & Sporn, 1995; Enders, 2001; Sporn, 1999). For example, the expansion of higher education has resulted in a larger and more heterogeneous student population, which has challenged traditional teaching methods (Dill & Sporn, 1995; Enders, 2001; Gumport, 2000; Nowotny, 1995; Sporn, 1999; Sörlin, 1996). Furthermore, state funding has fallen even though universities have been expected to expand (Enders, 2002; SOU 1996; 21). In Sweden the control system has become more decentralized and more goal and result oriented by the government (Sporn, 1999; SOU 1996; 21). The growing cooperation in higher education within the European Union (EU) and the increased use of information technology (IT) has increased academic staff numbers and students as well as funding across national borders physically as well as virtually (Dill & Sporn, 1995; Sporn, 1999). As a result, universities are nowadays forced to compete in an international market, which creates a complex situation as universities are expected to cooperate with one another, i. e. with their competitors (Dill & Sporn, 1995; Kristensen, 1999; Sporn, 1999).

The governance model used in the EU aims at increasing university autonomy, allowing each university to define its own niche and adaptation strategy. The policy has also been to create a more competitive environment for universities (Enders, 2001). One of the consequences is that an increasing number of universities in Europe struggle to find successful economic adaptation strategies to enable them to survive in the new environment (Clark, 1998). Common patterns in the adaptation strategies used by such universities have been to reduce costs¹, improve teaching methods and to find external funding (Clark, 1995; Dill & Sporn, 1995; Enders, 2001; Gumport, 2000; Sporn, 1999). These common adaptation strategy patterns tend to increase homogeneity among universities, i. e. “institutional isomorphism” (Huisman, 1998), which means that universities tend to copy one another (Galbraith, 1999).

¹ By reducing the number of academic staff, reducing administration, cutting courses and programmes that are no longer attractive enough to the student population.

Recent research has suggested that universities ought to develop more individual adaptation strategies in order to become more competitive and effective (Clark, 1998; Huisman, 1998). To be able to cope with the competitive situation, universities need to borrow strategies and models from business life, such as market-led resource allocation, efficiency maximisation and focus on productivity (Birnbaum, 1988; Clark, 1998; Enders, 2001; Gumport, 2000; Huisman, 1998).

To view universities as market responsive organisations however challenges the traditional legitimacy of higher education, i. e. as social institutions that cultivate citizens. This view has resulted in tensions within universities. While academic professions try to resist the transformation of higher education into an industry, academic boards have been forced to apply more business-like approaches in order to locate external and diversified funding sources (Gumport, 2000). Galbraith (1999) and Gumport (2000) point out that universities already have adapted to the market discourse by applying the same adaptation strategies as business or industry. The development and application of innovative and entrepreneurial approaches in universities that Clark (1998) and Hölttä (1995) highlight, seem to support the notion put forward by Galbraith and Gumport.

On the same basis as above, there have been suggestions that universities should become learning organisations (Boyce, 2003; Dill, 1999; Kristensen, 1999; Mulford, 2000), and there are a growing number of universities that aim at becoming learning organisations, according to their vision. However, the proposal is mainly based on theoretical and normative discussions, as Dill (1999) emphasises, rather than on empirically based research.

Chapter 1

Theoretical Framework

Before defining and distinguish learning organisations from organisations in general, the characteristics of public universities and their impact on universities' adaptability will be discussed briefly. Note that universities refer to public universities only from now on.

The Characteristics of University Organisations

The higher education system and the organisations that comprise it has been the object of research by different scientific disciplines for a long time. The description of university characteristics below is taken from classical and modern research studies. The choice of selection is based on relevance to this study.

Non-profit Organisations and Mission Diffusion

Baldrige (1983) and Birnbaum (1988) point out that universities differ from other organisations in many ways. For example, both authors focus the spotlight on the fact that while organisations in general strive to make profits, public universities are non-profit organisations. There is no doubt then, the authors continue, that the challenges to universities are more complex than profit-making organisations; after all, the profit-making organisation is not expected to expand with decreased funding, to cooperate with its competitors, to secure and exploit external funding without making a profit and without becoming dependent on its benefactors and to do this while developing its own unique adaptation strategies that meet these expectations and challenges.

While profit-making organisations are further characterised by a clearly defined mission, university missions tend to be more diffuse and vague, Baldrige as well as Birnbaum argue. According to these authors, this is because universities have to meet the demands of a complex mix of stakeholders, internal as well as external. On the one hand, Baldrige states, outsiders set university goals since government, society, business, the labour market as well as students make dif-

ferent demands and influence their missions in different ways. On the other hand, Baldrige continues, insiders influence goals, through the academic profession, faculty as well academic boards, who often have a differing focus. Birnbaum concludes that the crucial problem is the diffusion of mission that universities experience:

As colleges and universities become more diverse, fragmented, specialized, and connected with other social systems, institutional missions do not become clearer; rather, they multiply and become sources of stress and conflict rather than integration. The problem is not that institutions cannot identify their goals but rather that they simultaneously embrace a large number of conflicting goals. (Birnbaum, 1988, pp. 11; with reference to Gross & Grambsch, 1974)

While profit-making organisations measure their performances and profits in relation to their missions, no such comparable metrical measurement is available within universities, Birnbaum argues. This is partly because, Birnbaum continues, of the internal conflict with their missions, and partly because mission achievement and performance cannot be quantified on the same basis as in business life. Despite this, university organisational effectiveness, i. e. the measurement of performance by cost-monitoring and the monitoring of academic activity, has increased during the last decade, according to Clark (1987) - though not without internal conflicts. After all, these elements threaten fundamental traditions and core values within universities, organisational characteristics that also influence university adaptability.

Organisational Core and Traditions

As Norlander (1994), van Vught (1995) as well as Maassen, Jongbloed & Neave (1999) point out, universities rely on their traditions. Even today universities reflect specific elements that have existed over periods of time and most of their internal structures and activities remain as they always have been. According to van Vught, this is as a result of the conservation over the centuries of their organisational core, expressed in fundamental assumptions such as values, ideas and beliefs. Perhaps the most fundamental common norm among academics, according to Clark (1987), is comprised of the concepts of community, freedom and individualism. These concepts however are interdependent and transcend one another, and therefore it is necessary to clarify them.

In brief, the concept of community can be referred to as one of the common features of the academic profession: the academics are a “community” of scholars. According to Clark, this community contains norms shared by the profession. One example of such a norm is the principle of academic freedom, Clark continues, where the profession interprets the concept as freedom to choose which research questions are addressed, what is taught and learned and when. However, this freedom results in radical individualism, Clark argues, which can be expressed as follows within universities, according to van Vught:

Academic specialists retreat into the forts of their specialized knowledge-fields, and the result is an academic individualism that bring along a disinterest of the welfare of the broader organisation. In these circumstances, academics find a justification for hobbyism and introvert behaviour. They prefer the isolated study of highly specialized fields, and they are not longer concerned with the relationships of their work to that of colleagues. According to some experts in the field of institutional management in higher education, this academic individualism is more and more becoming the reality of present-day higher education. (Van Vught, 1995, pp. 204)

According to Clark, radical individualism is supported by academics’ strong identification with their disciplines which shapes norms, routines, goals and incentives, specific to them. Academics are more likely to be loyal to their discipline and its norms than to the university as a whole (Clark, 1983; 1987; Enders, 2002; Keller, 1983):

... the reality is that collectivity is increasingly rare and faculty and staff concerns are seldom for the well-being of the entire college or university or for the integrity of academic affairs of their universities, their schools, or even their departments. (Keller, 1983, pp. 37)

Academics’ strong links with their disciplines are also explained by the tradition of peer reviewing, Clark (1987) claims, where each discipline has its own tradition. As Clark emphasises, the strong disciplinary link and the use of peer reviewing is one explanation as to why academic work has tended to be based on a relationship of trust with management and why academics expect to work without management interference. However, the autonomous character of academic work nowadays has created a gap between the management body and the academics, Clark argues, where management is expected to direct the university and manage the quality of its internal processes while academics tend to view the administrators as not being competent to review their work.

When asked who is qualified to judge him, the academic will surely answer that not administrators, not trustees, not members of the general public, not even all the members of his discipline or professional area of study can do so. He will only accept only those few who are schooled and proven his speciality.
(Clark, 1987, pp. 388)

The peer review tradition reinforces individualistic and self-assertive behaviour among professionals and disciplines within universities (Clark, 1987) and such individualism results in minimal contact between most specialists (Clark, 1983). It is not only the organisational structure that knits the discipline together and separates the disciplines from one another. The disciplines are sometimes so differentiated that academics lack the means to relate to one another (Clark, 1987). Clark concludes that universities contain self-assertive professionals and disciplines that fragment themselves internally. In fact, the majority of universities tend to be characterised by “an extreme case of loosely-linked production” (Clark, 1983, pp. 21).

The high degree of differentiation and fragmentation has divided the academic profession to such a large extent that it has become difficult to identify a corporate academic profession, according to Clark (1987) and Enders (2001; 2002). The question arises: has academic freedom and radical individualism caused the fragmentation of the academic community? Both Clark and Norlander (1994) however state the view that radical individualism is dualistic. It fragments the academic community at the same time as it integrates it. It fragments it by separating professionals from one another; it integrates it by knitting professionals together through their shared norms.

However, the high degree of differentiation and fragmentation within universities make them difficult to integrate and according to Clark (1987), this is the crucial problem for universities with regard to their adaptability. It is perhaps not surprising that it is difficult for universities to adapt to changes in the environment when professionals and disciplines have their own ideas and mistrust the ability of the management bodies to do their job.

Decision-making and Authority

Traditionally, universities decision making structures have been characterised as hierarchical and patriarchal, and these structures are still reflected in today's universities (Ehn, 2001; Norlander, 1994). Both Norlander (1994) and Clark (1987) describe these structures as "bottom-heavy" and difficult to move.

Decision-making processes in universities are often complex, according to van Vught (1995), since the decision-making power is extremely diffuse. Academics often influence processes on different organisational levels, van Vught emphasises, - they are after all professional experts. They are therefore, van Vught continues, prone to influence the decision-making of the central administration as well. However, decision-making processes within universities are characterised by conflict. According to Holton & Phillips (2000), the conflict between faculty and administrators has been present since "the dawn of academia"- while faculty are likely to react to administrators' decisions, administrators are likely to view faculty as being characterised by "inflated egos, exaggerated social importance and special rights". As Holton & Phillips point out, there are a number of reasons for this kind of conflict. One of them is that the different actors on the academic scene answer to different authorities. While faculty members answer to peer reviewers, administrators answer to budgets and missions set down by government. Maassen & Gornitzka (1999) argue that internal conflicts are the reason why decision-making processes are characterised by competing interests and groups striving for power. It is this, they conclude, that explains universities' problems with integration and adaptation; the more energy used on internal conflicts, the less time for development oriented activities.

Managerial Modes

The pressures from the environment and the lack of funding have resulted in the development of new managerial modes in universities, characterised by close control of cost and of academic activity (Enders, 2002). Consequently, increased university autonomy has created a "rebureaucratization", Enders (2001) claims, which produce rigidities. However, academics seek to resist this control, according to Clark (1987) and Gumport (2000), by referring to traditional values, such as autonomy of the community, academic freedom and peer reviewing. It is an interesting paradox, Clark points out, that the new managerial

modes, whose purpose is to enable adaptation to a turbulent and demanding environment, tend to be more bureaucratic than the old management methods. Consequently, the new managerial modes contrast starkly with the more traditional collegial, symbolic representative and supervising leadership that has been characteristic of universities for such a long time (Birnbaum, 1988; Enders, 2002). However, universities might have good reasons for changing their managerial modes.

As mentioned, universities have difficulty to integrate internal processes and therefore also find it difficult to adapt to the environment. As Clark (1987) points out, by increasing the bureaucracy, universities are tightening the loose links, which will make their internal processes easier to control, predict and integrate. The new bureaucratic managerial mode therefore has as its aim to integrate universities. According to Clark, the integrative work is mostly dependent on the professional oligarchy and central administration:

Professorial oligarchy may be strong integrative: leaders of an academic senate move toward integrating frames of reference as they struggle with such campus wide issues as the criteria for promotion to tenure. Central administrators often become key sources of integration. The campus head - president, vice-rector, rector - may symbolize the whole. The administrators who specialize, such as vice-president for finance or a dean of student affairs, generally bridge across the many divisions of academic specialization. In short, the bureaucracy integrates. (Clark, 1987, p. 389)

However, as Birnbaum (1988) makes clear, even though increased bureaucracy tightens links which makes the organisations easier to control and predict, loose links make universities more sensitive to changes in the environment even though the resulting organisations are more difficult to integrate and manoeuvre:

Loosely coupling therefore can be considered not as evidence of organisational pathology or administrative failure to be identified and corrected but rather as an adaptive device essential to the survival of an open system (Birnbaum, 1988, pp. 41)

As Birnbaum concludes, effective administration of universities is not necessarily about avoiding loose links within the organisation, but accepting them and learning to understand how such links work in order to control it. Such understanding is based on fundamental knowledge and application of system theory and system thinking, but according to Galbraith (1999), such application is a missing component in universities, particularly regarding their adaptation and problem-solving ability.

Research Perspectives on University Adaptability

Traditionally, research into university adaptability has mainly focused on changes in response to mandate and planning and the underlying mechanisms that influence change (Sporn, 1999). Such research has, according to Birnbaum (1988), often viewed universities as political, bureaucratic or collegial organisations, i. e. as more or less mechanical and hierarchal organisations that are rigid, adapting with difficulty. Recent research has focused on the inter-dependent relationship between universities and their environment in order to understand and improve their adaptability (Sporn, 1999). This has resulted in a change towards more organic, cybernetic and/or network organisational models, which are assumed to be more adaptable (Birnbaum, 1988; Sporn, 1999). It is interesting to note that while universities tend to increase their bureaucracy in order to integrate, control and improve their adaptability, recent research reveals that an open system approach, and organisational models that rely on that approach, are the most adaptable. From that perspective, it seems that universities' ability to absorb and use the results of empirically based research on their own organisations is surprisingly limited.

According to Sporn, it is the increased complexity of the environment that has resulted in the alteration of the research perspective. Often, Sporn continues, the research focus has been on how to survive and become effective and competitive. Furthermore, such a research approach relies on the traditions of organisational analysis and on general theories of management, such as organisational change, development, design and learning, according to Sporn. The focus on universities' capacity to adapt to changes in the environment implies that their adaptation strategies are reactive rather than pro-active, a perspective that has been criticized for being one-dimensional as it focuses on external university conditions only.

Massen, Jongbloed & Neave (1999) are among those who underline the risk of using such a one-dimensional perspective since it ignores the significance of a university's internal conditions and their influence on their adaptability. As the characteristics of university organisations lie in their cultural and structural settings, it is particularly important to study these to understand their adaptability (Clark, 1986; 1987; Maassen & Gornitzka, 1999). Sporn (1999) and Gumpert (1999) seem to represent the two-dimensional, dialectic perspective, since they refer to the same definition of organisational adaptation:

Organisational adaptation refers to modifications and alterations in the organisation or its components in order to adjust to changes in the external environment. Its purpose is to restore equilibrium to an unbalanced condition. Adaptation generally refers to a process, not to an event, whereby changes are instituted in organisations. Adaptation does not necessarily imply reactivity on the part of an organisation because proactive or anticipatory adaptation is possible as well. But the emphasis is definitely on responding to some discontinuity or lack of fit that arises between the organisation and its environment. (Cameron, 1984, p. 123, in Sporn, 1999, pp.25-26)

Cameron's definition indicates that organisations can be re-active, active, as well as pre-active in their adaptation strategies. The pre-active perspective refers to organisations ability to influence the environment and/or to discover, predict or anticipate changes in the environment. Furthermore, it refers to their ability to restructure themselves in order to better reflect the environment and to become more creative, innovative and competitive, which Sporn points out. The focus on organisational relations and interactions with the environment implies that adaptive organisations are viewed as open systems. Such a view on the relationship between universities and the environment is in accordance with Birnbaum's (1988) system theory perspective where universities are viewed as open and loosely coupled systems, which include the use of organic, cybernetic and/or network organisational models (see also Boyce, 2003, Sporn, 1999 and Weick, 2000).

Recent research has moved towards the internal perspective, or in some cases, towards a combination of external and internal perspectives. As Maassen, Jongbloed & Neave (1999) point out, such a change in perspective has widened the possibility to provide a more holistic understanding of university adaptability:

In order to understand the way higher education institutions adapt, we (CHEPS², my notation) are moving gradually from an emphasis on system level issues, such as governmental policies and steering models as well as quality assessment mechanisms, toward a focus on institutional level issues, with governmental policies representing one of the external variables to take into account. (Maassen, Jongbloed & Neave, 1999, pp. 3)

In the research literature on university adaptability, three theoretical perspectives emerge as employed particularly in this field of research: resource dependence theory, strategic choice and contingency theory, which all are influenced by open system theory. Each of these theoretical perspectives will be discussed in the following.

² Center of Higher Education Policy Studies (CHEPS), Twente University, Netherlands.

Theoretical Perspectives on Universities' Adaptation

From a resource dependence perspective, the focus is on universities' lack of resources, which increases their dependence on the environment as well as on other universities that might control the resources they need (Gumpert, 2000; Maassen & Gornitzka, 1999; Sporn, 1999). Indirectly, as Maassen & Gornitzka argue, this means that universities are controlled by external forces. Furthermore, according to Maassen & Gornitzka and Sporn, the focus is on universities' development of adaptation strategies for increasing their resources and decreases their dependence on externals. From this theoretical perspective, the authors conclude, universities with a close link to the environment are assumed to secure more resources than universities with a loose link. Consequently, success or failure is dependent on universities' internal structures as well as the mix of external stakeholders, which Maassen & Gornitzka and Sporn emphasise. However, from a resource dependence perspective, the authors continue, universities are not only viewed as dependent on the environment. Instead, the relationship is inter-dependent, which suggests that universities have the ability to influence the environment as well.

In common with the resource dependence theory perspective, the strategic choice approach views universities' adaptation as dependent on their ability to develop strategies in order to respond to changes in the environment. Child (1972) argues that from this perspective universities are viewed as organisations containing coalitions of interest groups, where the most dominant coalition group makes the decisions and creates the strategies. For this reason, Sporn argues, much research on university adaptation using this perspective has focused on the variation in interests, goals and the identification of power, which influence decision-making processes in the universities - also in relation to an uncertain environment. Consequently, organisational adaptation is seen as a process, characterised by evaluation, choices, activities and efficiency i. e. doing the "right things", according to Sporn who continues that successes or failures are dependent on the decision-making process and the degree of influence of the constellations in the dominant coalitions. Chaffee (1983) has identified three different strategies that universities apply: the linear strategy, the interpretive strategy and the adjusting strategy. The linear strategy focuses on planning based on methodological, steered and sequential acts. Decisions and plans are integrated where management has the possibility to control and change the organisation, which from my point of view leads the thinking towards bureaucratic change. The interpretative strategy takes its perspective from the symbols

and norms that steer the behaviour of the organisational members and uses these symbols and norms to improve the relations and interactions within the organisation, which is reminiscent of a cultural approach to organisational change. Finally the adjusting strategy includes the scanning of environmental changes, where the university is always prepared to change. The management is searching for strategies to achieve a balance between the organisation and the environment in a less integrative way, which leads my thinking towards organic organisational changes.

The contingency theory perspective, also called “organisational design”, views university adaptation as a response to changes in the environment where the management strives to balance internal needs with conditions in the environment, according to Sporn. Accordingly, there are similarities between resource dependence theory and strategic choice perspective: the focus on the relationship between the university’s internal structures and the environment. The dependence on environmental conditions means there is no “best” way to organise internal structures, as the authors point out. Instead, it is about identifying the most fitting organisational structure in relation to the environmental conditions (Lawrence & Lorsch, 1986; Morgan, 1986; Sporn, 1999). According to Burns & Stalker (1961), Morgan, (1986) and Sporn (1999) mechanical, hierarchical and bureaucratic organisation structures are most appropriate in a stable environment, while organic organisation structures are appropriate in a more turbulent environment. With respect to the turbulent environment in which universities exist, an organic and open system perspective ought to be the natural choice when studying their adaptability. Birnbaum (1988), supported by Burns & Stalker (1961), finds that an open system perspective, where loose links are taken into account, is the most adaptable organisation model, while the new bureaucratic managerial modes are not. Consequently, there are several arguments that support the idea that an open system perspective is particularly useful in order to study and create an understanding of the adaptability of universities.

Swedish Contributions to the Research Field

Research into university organisation adaptability is a large, active and international research field. However, Swedish contributions to the research field have fallen during the past ten years³. During the 1970's and 1980's, Sweden was one of the leading countries for research into the higher education system and its organisation, conducted by disciplines such as economics, business economics, economic history, history of ideas, political science, philosophy, geography and organisation theory (Neave & Jenkinsson, 1983; Vislie, 1997). The author's investigation and evaluation of Swedish contributions to the research field reveals that the science of education has always had a strong link to research on higher education, but has not been particularly focused on organisational issues, such as culture and structures. According to Vislie, this may appear natural since the science of education has strong links with pedagogy and teaching. Accordingly, the science of education has traditionally contributed to the research field by focusing on learning and teaching processes in lower system levels rather than at an organisational level. Kim & Olstedt's (2003) review of research into the science of education and higher education in Sweden supports this conclusion, since their review reveals the discipline has mainly contributed to the research field by focusing on students' learning, the relation between higher education, work and lifelong learning, learning and teaching in higher education and students as journeymen between higher education and work.

Instead, Swedish research into university change processes has been represented mainly by political science and economic science, according to Neave & Jenkinsson (1983) and Vislie (1997). The most internationally known and referenced research from this period, according to Neave & Jenkinsson and Vislie, was conducted by Lane (1981; 1983;9, 1984;3, 1984;8) and his co-workers (Lane & Fredrikson (1978; 1983) and Lane, Stenlund & Westlund (1981;10, 1981;14, 1981;15, 1981;17). These studies showed that changes in the management governance system had lesser influence on university organisation decision-making processes and that the academic power structures reflected old-fashioned corporate models. Another internationally known and well-referenced researcher from this period is Premfors (1977;2, 1978; 1980; 1982;19, 1982;24; 1983;2, 1983;26, 1983;28, 1985;33) who has focused on the higher education system, its organisation, policy-making, implementation processes and research environments within universities (Neave & Jenkinsson, 1983; Vislie, 1997).

³ Conversations with Professor Guy Neave, Oslo University, summer 2003, Professor Mary Henkel, Oslo University, summer 2004 and Professor Maurice Kogan, Oslo University, summer 2004.

More recent Swedish research contributions are represented by Schilling (2005), economic history, who has studied the research funding system influence on Swedish university research strategies. Furthermore, S. G. Marton, in the field of political science and F. Marton, Askling and Bauer (1999), in the science of education, have together studied how political policy processes influence the internal conditions of universities, such as their academic work and values. Furthermore, F. Marton has together with Bowden performed a study (1998) where the future university is viewed as the university of learning. Here, teaching, research and community services are seen as producing learning on an individual, collective as well as on a local level. The internal relationship between these levels and the management has been linked and explained by the application of theory. To conclude, Sweden is active in the research field even though there has been a falling trend. The science of education has moreover contributed to the field, in the area of university adaptation strategies, even though it may not be the main research focus in this discipline.

Views on Learning Organisations

University organisations' activities are strongly related to learning, such as teaching, supervision and research. However, that is not sufficient to label university organisations as learning organisations from a theoretical perspective (Granberg & Ohlsson, 2000). Some space therefore needs to be given to distinguish learning organisations from organisations in general, by applying theories developed from production management systems. The choice of theories is because the theoretical framework of learning organisations is mainly developed from a perspective which is linked to the market responsive approaches within universities as previously highlighted.

In the research literature on university change and development, it is more common to use the concept of adaptation rather than learning. Sometimes, it seems that the concepts are used synonymously. As the brief discussion about the research field has shown, the concept of adaptation may refer to the process of change, which can be pro-active and active as well as reactive. Learning is also seen as a process that results in changes.

Mulford (2000) defines learning organisations as organisations that structure, restructure and develop themselves in such a way that the organisation as well as its organisational members continually learn from their experiences, from one another as well as from the environment. The learning results in effective problem-solving and organisational improvement, which leads Mulford to reject the idea that learning organisations are about fixed policies and goal formulations. Granberg & Ohlsson (2000) defines the concept in a similar way; an organisation that creates good conditions for organisational members' learning and uses their learning to influence and adapt to the environment is a learning one. Mulford and Granberg & Ohlsson have in common that they focus on the link between individual and organisational learning as the result of problem-solving on the one hand, and on the relationship between the organisation and the environment on the other hand. Argyris & Schön (1996) and Senge (1999) appear to define learning organisations in pretty much the same way; organisations with a highly developed ability to identify and solve problems with the purpose of adapting to a changing environment are seen as learning organisations. In the views that these researchers hold on learning organisations, learning is seen as an important component of adaptability. In other words, learning is seen as a pre-requisite for adaptation.

Starkey (1996) uses learning organisation as a metaphor, which has its origin in the vision and the search for a strategy that support the individual's development within an organisation that is constantly changing relative to a changing environment. Starkey shares the view with Senge (1999) that learning organisations are concerned with linking personal visions and personal mastery to the organisation's vision. According to the latter, learning organisations are characterised by vision that are formulated using a bottom-up process, i. e. that emerge from organisational members' personal visions. As a result of this condition, a learning organisation cannot be presented graphically in organisational matrixes as a "winning formula" for how to structure an organisation. Learning organisations are not defined by fixed organisational structures that can be copied, Senge argues. Instead, Senge continues, learning organisations use the process of learning systematically as a strategy for effective problem-solving to meet changes in the environment. In order to apply systematic learning, organisational structures have to be flexible.

As can be observed, there are similarities between the characteristics in learning organisations and Birnbaum's (1988) assumption that adaptable organisations require organic or cybernetic organisational structures that are flexible and allow restructuring when necessary. This indicates that learning organisations learn how to learn and continually improve their learning capacity and adjust their internal structures in order to support such learning. Each of the writers mentioned above seems to view learning on different levels as a strategy as well as a process for adapting to a changing environment, where the product can be used to improve the organisation's learning ability.

Learning Organisations as Open Systems

A learning organisation is very much of an open system, as many researchers have pointed out (Ahrenfelt, 2001; Argyris & Schön, 1996; Granberg & Ohlsson, 2000; Morgan, 1986; Mulford, 2000; O'Connor & McDermott, 1997; Senge, 1999). A system is defined as a set of inter-related elements, subsystems, which can be viewed as independent entities and dependent parts of an integrated entity at one and the same time (O'Connor & McDermott, 1997). A university can be defined as a system, where departments and disciplines are examples of subsystems. A department as well as a discipline is itself an entity. At the same time these subsystems are parts of a larger entity: the university. A

university would not be a university without its departments and disciplines, but departments and disciplines would not exist without the university either.

As Birnbaum (1988) and O'Connor & McDermott (1997) point out, the characteristics of open systems are their relation to and interaction with the environment as well as the ability to scan and discover changes in that environment. This means that open systems measure the gap between where they are and where they want to be, which can be seen as striving to maintain a stable relation with the environment. When the measurement results in a state of inequilibrium, open systems change their internal structures when necessary in order to restore equilibrium (Birnbaum, 1988; O'Connor & McDermott, 1997; Morgan, 1986; Sporn, 1999). This process, also called homeostasis, is self-regulative, as Morgan emphasises, and means that learning organisations have the ability to *learn from the environment*. However, the relation and interaction with the environment is mutual and inter-dependent in a dialectic way and as a result, *learning organisations influence the environment* as well.

In contrast to the open systems view, organisations can be viewed as closed, or at least as less open systems (Ahrenfelt, 2001; Argyris & Schön, 1996; Morgan, 1986; O'Connor & McDermott, 1997). The traditional research perspective on university adaptability, where universities are seen as political, bureaucratic or collegial organisations can be seen as examples of closed or less open system views. As a consequence, closed or less open organisations interaction with the environment is limited, and therefore they have lesser ability to scan and discover changes that might influence them (Argyris & Schön, 1996; O'Connor & McDermott, 1997). In other words, closed, or less open organisations have less ability to learn from the environment.

Open systems' capacity to learn is not only related to the environment, it also depends on internal relations between various parts (Morgan, 1986, O'Connor & McDermott, 1997, Weick, 2000), and Clark, 1983). Universities have been seen as loosely coupled systems in which internal interactions may be limited or inhibited, depending on the strength of the couplings, which may, in the worst case, hinder learning. Taking this view, universities are not structurally created as learning organisations, as Birnbaum (1988) points out. From another view, learning organisations appear to require more tight links where parts interact frequently and *learn from one another*. As Clark (1987) pointed out, the new managerial modes have increased bureaucracy, which increases the links between the

parts and the entire organisation. This means that the new managerial mode tends to tighten the links within universities, which ought to increase their learning capacity.

Individual Learning

In learning organisations, learning occurs on different system levels, on organisational and on group level as well as among individuals. The literature of learning organisations reveals that individual learning theories developed by researchers like Piaget, Dewey, Lewin and Kelly have influenced the thinking to a large extent (Granberg & Ohlsson, 2000) and one reason may be that Piaget's views on individual development in particular are in many ways related to open system theory. Piaget (1976) viewed the individuals' relationship with the environment as mutual and interdependent in a dialectic way. Motivation to learn derives from the individual's experience of a state of in-equilibrium in relation to the environment. Such experience is based on feedback from the environment regarding earlier actions. As individuals strive to restore a stable relation to the environment, they somehow have to change: they *adapt* to restore equilibrium. According to Piaget, this can be done by applying one or both of two adaptation strategies which both contain learning as a core element. *Assimilation* stores the feedback in already existing cognitive structures, whereby already existing cognitive structures are reinforced. *Accommodation* occurs when the existing cognitive structures are not applicable as the individual tries to store the new experiences. Either a reconstruction of the structure is needed or a new one needs to be invented. This means, individuals learn something qualitative and new. Piaget found the adaptation process to be cyclic and self-regulative, and he viewed the individual learning process as socially constructed. Consequently, Piaget viewed learning as a necessary pre-requisite for adaptation.

Like Piaget, Dewey focused on individual's relation and interaction with the environment when he created his theories on learning. As the environment is constantly changing, individuals will continually experience new problems and these problems motivate individuals to learn. First, the individual tries to define the problem and what distinguishes the problem from earlier experiences. The individual then formulates a hypothesis about cause and effect regarding the emerging problem. Next, the individual uses reasoning, which involves a mental processing of facts and hypothesis. Here, individuals try to predict the outcomes of different possible actions. Individuals apply logical induction as well

as deduction during this phase. Regardless of whether actions result in problem-solving or not, this process results in knowledge and learning, according to Dewey. Learning results in habits, which provides individuals with a stable relation with themselves - at least until the next problem arises.

There are a number of common features to these theories. For example, individuals have an interdependent relationship and interaction with the environment, and the conditions of in-equilibrium, or problems as motivation for learning. Furthermore, in both theories individuals are active in their learning process i. e. self-regulative and constructive. Another common aspect is that earlier experiences stored in existing cognitive structures, are used in the learning process and the learning process results in new experiences, which either fit already existing cognitive structures or require a reorganisation of cognitive structures or results in new structures.

Many of the elements of these learning theories have stimulated the research on learning organisations. As stated earlier, it is not enough for an organisation to cause individual learning of which a university is so full, to be called a learning organisation. To do so, individual learning has to be shared with others, by dialogue through which mental models can expand. It is characteristic of learning organisations that individual learning becomes collective, that there occurs “group” learning.

Group Learning

Group learning consequently can be seen as the link between individual and organisational learning and such a link becomes possible through *dialogue*, according to Dixon (1997) and Senge (1999). Senge uses Bohm’s (1965, in Senge, 1999) concept of dialogue when he defines and underlines the importance of this activity in making individual learning collective. This includes making unconscious mental models conscious, according to Senge, and requires an internal dialogue, i. e. reflection, as well as external dialogue, with others. However, dialogue should not be confused with discussion, where the focus is on the argumentation in order to “win”, according to Bohm (1965, in Senge, 1999). By dialogue, individuals have the ability to share perspectives with one another, perspectives they do not have access to by themselves. Consequently, dialogue is about widening the boundaries of mental models, or cognitive structures, as it makes it possible for individuals to review their mental models, Bohm (1965, in

Senge, 1999) argues. According to Senge, conflicts are natural in well functioning and learning groups since it is characteristic of these groups to be open to new perspectives.

Like Senge, Dixon (1997) underlines the importance of dialogue when individual learning becomes collective, or “team learning”, as Senge labels it. Dixon views individual learning linked to collective learning by “meaning structures” and distinguishes three kinds, 1) private, 2) accessible and, 3) collective meaning structures. Private meaning structures are individuals’ personal thinking that is not shared with others. Accessible meaning structures are those which are shared with others and become a part of the “objective” world. Collective meaning structures are thoughts that are shared among individuals and are manifested within the organisational culture by rules, norms, values, rituals etc, i. e. through dialogue in everyday life. Accordingly, collective meaning structures are not visible and have no distinguishing boundaries. Even though the concept of collective meaning structures suggests that individuals interpret and understand them in the same way, they are not identical for each individual, Dixon points out, but similar enough to be understood as collective. Consequently, dialogue produces and reproduces the organisational culture and is the medium through which knowledge can be created and transferred within and between individuals as well as groups of individuals.

Even though universities contain common meaning structures, the link between individual and collective learning within universities is unclear. In the theoretical framework of learning organisations, it is still not enough to make individual learning collective. Collective learning also has to influence the organisation’s culture and structures.

Organisational Learning

Learning takes place in all organisations, but following different paths. In some organisations, the learning that takes place aims to keep the internal conditions stable, according to Argyris (1999), Argyris & Schön (1990; 1996), Boyce (2003); Ellström (2001; 2002) and O’Connor & McDermott (1997). The pattern behind this kind of learning at the organisational level tends to be characterised by the application of what is already known (Argyris and Schön, 1990), often by the use of procedures and rules (Ellström, 2001; 2002) and by the sys-

tematic avoidance of questioning and changing of underlying assumptions and core values (Argyris & Schön, 1990; Ellström, 2001; 2002). Underlying qualities of learning in these organisations are consensus, a high degree of standardization, stability and the avoidance of uncertainty (Ellström, 2002). Argyris (1999; see also Argyris & Schön, 1990; 1996) calls the kind of learning that occurs in organisations characterised in these ways as *single-loop-learning*, Schön (in Argyris & Schön, 1990) *first order learning*, while Ellström (2001; 2002) calls it *mastery learning*. This learning quality is not characteristic for learning organisations (Argyris & Schön, 1990; O'Connor & McDermott, 1997).

As many researchers have noted universities do not change easily (Birnbaum, 1988; Clark, 1987; Ehn, 2001; Norlander, 1994; van Vught, 1995). According to Boyce (2003), many universities tend to apply first order learning for instance when they add, eliminate and revise courses and programmes, departments and services, which keep the core values, assumptions and internal structures of a university stable. Consequently, such universities are not examples of learning organisations.

When organisations characterised by first order learning are questioned or challenged, there are forces activated, characterised by dynamic and systematic resistance to the changes (Argyris & Schön, 1996, O'Connor & McDermott, 1997; Senge, 1999). These forces are grounded in organisations' culture and informal structures and are expressed in different ways. The purpose of the resistance is, according to those authors, to conserve existing culture and structures, and the forces tend to be active as long as the pressure for change is there. Schön (in Argyris & Schön, 1990; 1996) calls these forces *dynamic conservatism*, Argyris (1999, Argyris & Schön, 1990; 1996) *defensive routines* and O'Connor & McDermott (1997) *balancing feedback*. Examples of dynamic conservatism, defensive routines or balancing feedback in universities are academics' resistance to managerial control, the movement toward a market-dominated discourse and the protection of traditional values.

When the internal processes of an organisation are characterised by the questioning of underlying assumptions like their core values (Argyris & Schön, 1996; Boyce, 2003; Ellström, 2001; 2002; O'Connor & McDermott, 1997; Senge, 1999) and the questioning is reflected on and processed in order to facilitate examination of underlying structures, and identification of current conditions in order to understand the non-linear logic chain of cause and effect (Argyris &

Schön, 1990; O'Connor & McDermott, 1997; Senge, 1999), researchers characterise it as a learning organisation. Schön (1990) calls this questioning of already existing values and processes *reflect in/on action*. Ellström (2001; 2002) finds that learning organisations are characterised by alternate thinking, experimenting, a high degree of risk taking, high degree of tolerance of mistakes made among individuals as well as among groups. Learning organisations, Ellström emphasises, are also characterised by a culture that encourages and allows such behaviours, and those organisations have the ability to deal with conflicts, and use conflicts as learning opportunities. Learning organisations are characterised by a high degree of uncertainty and tolerance to unstable conditions.

The process of questioning and reflection results in changes in organisational missions, culture, structures, processes, performance and behaviours, according to Argyris & Schön, (1990, 1996, 1999), Boyce (2003), Ellström (2001, 2002), O'Connor & McDermott (1997) and Senge (1999). While Ellström (2001; 2002) calls this kind of learning *development oriented learning*, Argyris (1990; 1996; 1999) calls it *double loop learning* and Schön (Argyris & Schön, 1990; 1996) *second order learning*. The different concepts refer to the same learning quality.

However, according to Argyris (1999) and Boyce (2003), double loop learning may end in two different ways - one consists of temporary changes and one of irreversible and transforming changes. It is my view that learning that results in temporary changes may be a result of delayed balancing feedback, also called dynamic conservatism or defensive routines, and is not characteristic of learning organisations as it is questionable whether anything qualitative really has been changed. Instead, learning that result in irreversible and transforming changes, is a characteristic trait of learning organisations.

Examples of second order learning, double loop learning or development oriented learning in universities, according to Boyce (2003), are the universities⁴ included in Clark's (1998) study of entrepreneurialism and university transformation, which all changed their steering core, expanded their developmental periphery, diversified their funding base, stimulated the academic heartland and created an integrated entrepreneurial culture. In Boyce's view, these universities can be seen as examples of learning organisations. According to Clark, technology sciences were more likely to adapt to an entrepreneurial culture

⁴ Twente University, Netherlands, Joensuu University, Finland, Chalmers Technical College, Sweden, Warwick University, English Midlands, UK, Strathclyde University, Scotland, UK.

since they have a more natural link to the environment than humanities and social sciences. This condition risks the division of the entrepreneurial universities into two subcultures, one moving toward the market discourse and one resisting the move and protecting the traditional discourse. Clark has noted however that also the social sciences and humanities finally adapted since they found educational as well as economic value in becoming more enterprising. Thereby the entrepreneurial cultures were integrated. Whether this means that entrepreneurial universities are examples of learning organisations has not been clarified in the literature.

However, while most of the authors mentioned above distinguish organisations in general from learning organisations by referring to different qualities of learning, Ellström (2001; 2002) argues that learning organisations are not solely characterised by development oriented learning. Instead, learning organisations are characterised by a well-balanced mix of the two different learning qualities, where mastery learning is used to create effective routines for problem-solving and development-oriented learning for the improvement of such routines. Effective problem-solving however does not solely rely on effective routines, it also relies on the organisational culture - mental models (O'Connor & McDermott, 1997; Senge, 1999), which define how the organisation views, i. e. perceives and interprets the environment as well as internal processes. Consequently, learning organisations are characterised by a culture, i. e. mental models that allow questioning, experimenting and other characteristics mentioned, as well as routines, i. e. structures that support learning aspects within the organisation.

In Table 1, an overview of the theoretical framework of learning organisations is set out where one-dimensional learning illustrates the quality of learning that keeps internal conditions stable and two-dimensional learning illustrates the quality of learning that changes internal conditions.

Table 1. Overview of the theoretical framework of learning organisations.

<i>Theoretical perspective</i>	<i>System theory</i>	<i>Piaget</i>	<i>Dewey</i>	<i>Argyris</i>	<i>Schön</i>	<i>Ellström</i>
Quality of Learning						
One-dimensional learning	Closed/ Less open system	Assimilation	Habits	Single loop learning	First order learning	Mastery learning
Two-dimensional learning	Open system	Accommodation	Reflective thinking/-practitioner	Double loop learning	Second order learning	Development oriented learning The mix of both mastery and development oriented learning

The chosen theoretical perspective on learning organisations can be characterised as:

- 1) an open system, with the ability to learn from and influence the environment, as well as learning from within itself,
- 2) an organisation where vision emerges from individuals and where the individuals' vision is linked to the organisational vision, but where organisational vision and missions change as a result of learning,
- 3) an organisation where individual learning becomes collective by dialogue, requiring an encouraging and accepting organisational culture and supportive organisational structures,
- 4) an organisation where there is a well balanced mix of mastery and development oriented learning which includes a culture which promotes and encourages learning, with flexible structures that have the capacity to change (in order to support future learning),
- 5) an organisation where people use system thinking to identify and solve problems effectively

Critics and an Alternate Definition

From the ongoing theoretical and normative discussion in the research field, viewing universities as learning organisations, some criticism has been voiced against importing a theoretical framework developed from production management systems. Dill (1999), who is sceptic about whether it is possible or even useful to apply these theories to universities, has raised perhaps the most relevant criticism. One reason for Dill's scepticism is that the theories are developed from business life where the basic conditions, such as for instance very limited organisational aims, missions and profit-driven limitations, differ greatly from the basic conditions of universities. To transfer theories developed from this context to universities is questionable, Dill argues, since universities have their own conditions and characteristics. Another reason for Dill's criticism is that the literature on learning organisations is too normative. Dill views the theories about learning organisations as eclectic, based on evaluation ideas and concepts in relation to how they can be applied rather than on empirically based research. Dill is particularly critical of Senge's five disciplines, which he regards as an attempt to define and create an ideal organisation in which learning can be maximized. For this reason, Dill has defined an alternate definition of universities as learning organisations, or the academic learning institution as Dill calls it, which relies on five characteristics, based on Garvin's (1993) work.

The first characteristic, *instilling a culture of evidence*, refers to the fact that successful problem-solving is dependent on the quality of social knowledge, according to Dill, which includes the development of shared norms regarding analytical problem-solving and a common language and communication to develop new knowledge for the improvement of universities' core processes. Such fundamental changes in the academic culture are a pre-requisite for the development of universities' systematic problem-solving, Dill argues. The second characteristic, *improved coordination of teaching units*, relies on the assumption that successful problem-solving requires different structures that support communication which increases the potential for coordination, communication and accountability among academic staff. Here, Dill underlines the importance of organisational structures that support learning within universities.

The third characteristic, *learning from others*, stresses the importance of having a link to external reviewers as well as benchmarking in order to improve disciplines, courses and programmes. The fourth characteristic, *university-wide coordination of learning*, refers to the creation of additional structures in order to pro-

vide and support effective coordination, support and accountability for teaching and learning. Examples of such structures are, according to Dill, university-wide faculty committees with responsibility for quality in teaching and learning within academic units and allocating funding for experiments and innovations in teaching and learning. In addition to teaching and learning centres, curricula and programme evaluation groups and units for assistance in assessing students have been created. The fifth and final characteristic, *transferring knowledge*, is about bridging universities' traditional decentralized structures in order to transfer knowledge between different organisational units. This requires that universities have structures in place that support such knowledge transfer, according to Dill.

Relating Dill's definition of the academic learning institution to the already existing theoretical framework, some commonalities can be identified. Both views underline the importance of an organisational culture, characterised by norms that allow and encourage questioning and dialogue where the creation of knowledge and development becomes possible. The systematic process of problem identification and problem-solving, as well as scanning the environment, i. e. learning from externals, implies system thinking. However, the use of external reviewers is not included in the theoretical framework on learning organisations and here Dill has contributed with a new perspective. Note that learning from externals indicates that Dill shares the open system view. While the theoretical framework developed from production management systems underlines flexible structures that change as a result of learning, Dill stresses the importance of structures that support learning, such as knowledge transfer and communication. Dill's suggestion about supportive structures might be one of his greatest contributions to the theoretical framework since the importance of structures that reinforce and support the desired culture seems to have been neglected.

Looking at Dill's criticism and the underlying reasons behind it, it is difficult to disagree with him. It is true that most of the theories developed from production management systems are not grounded on empirical research and therefore normative. Even though there are similarities between Dill's suggestions and the theoretical framework of learning organisations, there are also fundamental differences other than those mentioned above. One such difference is that Dill's suggestions are adjusted to the characteristics and traditional features of and within universities, without suggesting that universities "should" work as

any business company or industry. This indicates that Dill relies on the traditional discourse when defining the university as a learning organisation, where its core values and missions are retained. However, the latter aspects differ from the theoretical framework of learning organisations where one fundamental characteristic is that core values are questioned and missions are changed as a result of the learning processes. This might indicate that both individual and collective learning in the academic learning institution risk not becoming organisational, that individual and collective learning will not influence organisational structures. Instead, it indicates that the construction of new organisational structures is assumed to influence individual and collective learning. This is a fundamental difference between Dill's suggestions, as far as I have interpreted and understood them, and the theoretical framework of learning organisations. However, one advantage of Dill's argumentation is that he provides concrete suggestions as to how to transfer knowledge externally as well as internally and how to integrate loosely coupled parts of universities - even though he thereby risks to become as normative as those he criticises.

Here, I wish to refer back to the turbulent environmental context and the tension between two competing discourses in which universities exist when defining a learning organisation. This means that neither the traditional nor the market-dominated discourse will be applied exclusively and consequently, neither the theoretical framework developed from production managements systems nor the theoretical framework provided by Dill will be solely used. With reference to the competing discourses, a mixed theoretical model of a learning organisation, i. e. a combination of both theoretical perspectives, will instead be defined and used.

Defining a Mixed Theoretical Model of the Learning Organisation

Open Systems Perspective

The researchers mentioned earlier in the theoretical discussion view learning organisations as examples of open systems⁵ that learn from and influence the environment in a mutual and interdependent relationship. Learning from the environment includes scanning and discovering changes in the environment, which can be done by effective routines as well by questioning and reflection⁶. While effective routines refer to supporting structures, questioning and reflecting refer to the organisational culture that might result in re-structuring in order to improve future problem-solving processes. This means the application of system theory principles in problem-solving processes, such as examining underlying structures for emerging problems, i. e. reactively, as well as pro-actively identifying problems that might influence them in the end. When necessary, a learning organisation restructures itself in order to adapt to changes in the present or future environment. Furthermore, it also has the ability to influence the environment. Accordingly, a learning organisation can reasonably be viewed as an example of an open system.

A Learning Culture

The researchers quoted in the theoretical discussion view learning organisations as characterised by a “learning culture”⁷. This includes common mental models that are characterised by openness in communication and tolerance of diversity of thinking as well as tolerance of mistakes⁸. This may result in conflict, but according to Ellström (2001; 2002) and Senge (1999), it is a hallmark of learning organisations. In learning organisations, conflicts are used as learning opportunities, as an opportunity for improvement and development. Furthermore, the

⁵ Dill (1999) suggests that academic learning institutions should learn from others, i. e. open systems perspectives. See also Ahrenfelt (2001), Argyris & Schön (1996), Birnbaum (1988), Granberg & Ohlsson (2000), Morgan (1999), Mulford (2000 in Hargreaves, Lieberman, Fullan & Hopkins, 2000), O'Connor & McDermott (1997) and Senge (1999).

⁶ See Ellström's (2001; 2002) mastery and development oriented learning.

⁷ Dill (1999) suggested the instilling of a culture of evidence, with a common language and shared norms for problem-solving. Argyris & Schön (1996), Ellström (2001;2002) and Senge (1999) have pointed out that learning organisations culture is characterised by openness, shared values and norms which are questioned, negotiated and allows questioning, conflicts and changes.

⁸ Ellström, (2001; 2002)

culture is characterised by the encouragement of questioning, experimenting and risk-taking as well as by the production and absorption of new ideas.

Such a culture requires vertical as well as horizontal dialogue. The open communication and dialogue do not only mean that individuals and groups can create knowledge; it also means that individuals as well as groups are able to learn from one another⁹ by knowledge transfer. In a learning organisation, individual and collective learning are closely linked and transcend each other. They are a pre-requisite for each other since the learning is a result of social processes. A learning organisation is therefore characterised by a culture where different groupings transcend professions and organisational boundaries.

The learning culture furthermore seems to be characterised by a strong common vision and a sense of moving in the same direction while allowing individuals to have different opinions on how to fulfil the vision (Senge, 1999; Starkey, 1996). This means that organisational members identify themselves with and can relate their everyday tasks to the vision. Furthermore, the common vision emerges from organisational members (Dixon, 1996; Senge, 1999, Starkey, 1996), but also in relation to assignments and missions from government and demands from society.

Accordingly, the learning culture includes learning from itself and as a result, a learning organisation changes its mental models. Accordingly, it has a well-balanced mix of mastery learning and development-oriented learning (Ellström, 2001; 2002), i. e. two-dimensional learning.

Supporting Learning Structures

In a learning culture internal structures are created that support communication and learning within the university on different levels¹⁰. They are also constructed so that they hinder features that work against learning. In a university that is structured for learning you find:

⁹ See Dill's (1999) transferring knowledge, Senge's (1999) team learning and mental models, Dixon's (1997) common meaning structures.

¹⁰ See Dill's (1999) "university-wide coordination of learning", i. e. additional structures in order to support learning. See also Argyris' & Schön's (1996), Ellström's (2001, 2002) theories where development oriented learning results in restructuring which supports future learning.

- Communication structures that are clear for all organisational members and that allow horizontal as well as vertical communication in order to create and transfer knowledge, absorb new ideas, and contain natural meeting arenas where dialogue and learning can take place.
- Systematic routines for data gathering, processing and evaluation about core processes as well as about what is happening in the surrounding world. Problem-solving processes are based on system thinking,
- Rewards that support the characteristics in the learning culture

The purpose of the structures is to support and reinforce the characteristics in a learning organisation, and integrate the activities and processes in different parts of the university¹¹. However, the structures are flexible and change as a result of development-oriented learning. It is therefore characteristic of a learning organisation to restructure itself when necessary, in order to continue to develop and improve the internal learning conditions within the university.

Looking at Organisational Culture & Structure

To create an understanding of the realities of an organisation, it is important to illuminate and analyse its internal and underlying structures of it (Birnbaum 1988; Dill & Sporn 1995; O'Connor & McDermott 1997). Culture and structures are defined in different ways. Briefly, structure refers to how something is organised, or constructed (Morgan, 1986), as a set of inter-related objects that relates to its internal relations, which together construct the object (Danermark, Ekström, Jakobsen & Karlsson, 1997). Structure can be intentional, i. e. formal, as well as actual, i. e. informal. In organisations, formal structures are examples of the organisation's external logic and can be graphically illustrated in matrices or schedules (Söderström, 1983). However, there is often a huge difference between how organisations intentionally and actually work, according to Ekholm (1988, 1989), Morgan (1999), Schein (1992) and Söderström (1983). Informal organisational structures describe how individuals and groups are related to and interrelated with one another in their daily work and are grounded on the organisational culture, Ekholm (1989) argues. This indicates that organisational culture shapes the informal structures.

¹¹ See Dill's (1999) "university-wide coordination of learning" – additional structures which support learning within the institution.

The concept of culture refers to patterns in social systems such as knowledge, ideologies, values, rules and daily rituals (Morgan 1986). This indicates that culture is a result of social processes. Organisations do not always contain one common culture, Morgan points out, since subcultures emerge and exist parallel to the common culture. According to Smircich (1983a, b, c, in Morgan, 1986), it is proven that organisations often have fragmented, or schizophrenic, cultures. As a result, an organisation might have conflicting cultures. Schein (1990) defines organisational culture as follows:

Culture can be defined as a pattern of assumptions invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore is taught to new members as the correct way to perceive, thinks, and feels in relation to those problems. (Schein, 1990, pp. 111)

According to Schein (1992), organisational culture stabilizes organisational structures. This means, organisational culture produces and reproduces the informal organisational structures and vice versa. Culture and informal structures are therefore inter-dependent and causative of one another, and the concepts can therefore be seen as dialectic and transcending.

Organisational culture has been studied from a number of perspectives. In university organisations, the concept of culture often has been used to examine organisational effectiveness (Maassen, 1996). According to Maassen, three different concepts of culture have been identified as particularly used in research into universities: organisational saga, the ideology of diversity and multiculturalism as a reaction to logical positivism, and the focus on university management. The first perspective, *organisational saga*, can be seen as the attempt to provide a holistic descriptive image of universities, where their present culture should be understood as a result of the historical processes and contexts. Organisational saga provides information about universities' common culture, i. e. integrative aspects. The second perspective, *diversity and multiculturalism*, has as its purpose to identification of the subcultures within universities, which can be seen as the features that produce and increase organisational fragmentation. The third perspective, *university management*, focuses more on the management modes and their implications for university effectiveness and cultural responses.

Alvesson & Berg (1992) have identified five different theoretical perspectives on organisational cultures, 1) culture as "*culture convention*", 2) culture as *meaning*

construction, 3) *culture as ideology*, 4) *culture as psychodynamics* and 5) *culture as symbolism*. The cultural perspective used in this study relies on the ideas of (1) culture convention, i. e. systems of values and beliefs, and (2) meaning construction. Personal values and beliefs become collective conventions by the construction and reconstruction of collective meaning structures by conflicting power groups or individuals. Such a perspective resonates with the fragmented subcultures that, according to Clark (1983) are characteristic of universities. The theoretical choice is also based on the assumptions in the theoretical model of a learning organisation.

Research Aims

Within the area of social science that focus on organisations a growing interest has been shown towards learning at the level of the whole organisation. Theoretical models of learning organisations have been developed. Mainly, inspiration to work out such models has been found when researchers have studied organisations active in the fields of business and industry. Less often the organisations that have been studied come from the field of education and when so, mainly schools have been studied. This study is to a small extent based on the latter kind of research. Instead, I have used studies focused on higher education institutions. Thereby, I hope to contribute to the knowledge about universities as learning organisations more directly, and avoid unnecessary translations between different corners of the knowledge field. This study therefore aims to explore and review the way in which a university has organised its inner life and to illuminate in what way its local organisation matches the characteristics of learning organisations, i. e. the constructed theoretical model of a university as a learning organisation. Furthermore, the study aims to explore in what way the organisational characteristics interact with one another in order to find out whether they support or hinder organisational learning in relation to the theoretical model.

Chapter 2

Method

How to Study a University's Culture and Structures

As the characteristics of the learning organisation lies in its organisational culture and structure, the question posed is how to study culture and structures within a university. If the focus is on the university's formal structures, they are easy to identify since they are examples of its external logic (Söderström, 1983) and therefore found in the university's official policy documents. Schein (1990) calls organisations' external logic "the levels of artefact and values". However, official policy documents should be interpreted carefully, Schein and Söderström point out, since there is often a significant difference between formal, i. e. intentional, and informal, i. e. actual, structures. Schein calls organisations' internal logic "the level of fundamental assumptions". Since the focus in this study is primarily the informal structures and how they interact with one another, an analysis of formal policy documents is not of the highest priority. However, documents that provide information about the university's vision might be of interest since vision and how they emerge are an important characteristic in the theoretical model.

When it comes to the identification of organisational culture and informal structures, problems arise, as Ekholm (1988; 1989) and Schein (1990) argue, since they are invisible as well as unconscious. After all, culture and informal structures lie in individuals mental models. However, mental models are manifested and expressed in social life and processes, according to Ekholm, Morgan (1986) and Schein. This suggests that organisational culture might be identified by observations. However, even though social processes are observable, the underlying assumptions behind the activities are not and accordingly, observations are not an appropriate data gathering method for identifying organisational culture and informal structures in this study.

To identify the university's internal logic, i. e. underlying assumptions, a data gathering method that identifies organisational member's assumptions, thoughts and feelings about the university and their work would be appropriate.

The search for underlying assumptions is also in accordance with the theoretical model of the learning organisation, where the common culture is seen as the construction of common meaning structures (Dixon, 1997), or mental models (Senge, 1999). Blossing (2000) has summarised Schein's (1990) fundamental assumptions:

Fundamental assumptions are about organisational members' view of reality; what is the truth, how time and space are related to each other and how these relations can be used. It is about how individuals view their relation to work. These assumptions influence organisations' internal integration and adaptability (Blossing, 2000, pp. 29 - my translation)

The quotation indicates that fundamental assumptions are of great importance in an organisation's ability to integrate and adapt. In other words, this implies that fundamental values can provide information about if and how a university meets the requirements in the theoretical model of a learning organisation.

In order to identify the fundamental assumptions, i. e. the organisational members' thoughts and assumptions, they have to express themselves. Consequently, interviews have been considered as the most appropriate data gathering method. If documents exist that provide information about fundamental assumptions among organisational members, they will be of interest to analyse too. The use of Schein's cultural perspective, i. e. fundamental assumptions, is also in accordance with the choice of cultural theory in this study, namely culture as conventions - a system of values and beliefs, and as meaning constructions.

Organisational culture may be identified by the analysis of documents and interviews. How then to study informal structures? Informal structures like organisational culture, are produced and reproduced by individuals in their interaction with one another. What is more, like culture, informal structures set the rules for human behaviour, which creates possibilities as well as limitations. However, this does not mean that structures can be reduced to individuals' acts, or that individuals *are* social structures. Instead, individuals and structures are intertwined, inter-dependent on and transcending each other, as Danermark, Ekström, Jakobsen & Karlsson (1997) point out. These authors furthermore stress the importance of distinguishing individuals as practitioners from the structures. According to Danermark, Ekström, Jakobsen & Karlsson the current thinking is misleading since it tends to identify individuals with their positions, linking individuals with their properties of the positions. This influences the understanding of social structures since it fails to address the relationship

between concrete and abstract observations and categories, or so the authors argue. Concrete observations and categories refer to actual, empirical observations, the authors continue, while abstract observations refer to synchronic events related to a “frozen moment”. Taking only one aspect of a concrete or abstract perspective into account, they conclude, will provide very little information about the dynamics of social processes. By considering both, a causal analysis that describes and/or explains the dynamics in the social structure and processes becomes possible.

By studying organisational culture, i. e. fundamental assumptions, patterns of social, informal structures emerge, since they are intertwined and transcend each other. However, by dividing organisations into subsystems, it may be easier to identify different aspects of informal structures as well as culture since the focus becomes more defined. Ekholm (1988; 1989, also in Blossing, 2000) has identified a number of subsystems within organisations that have been proven to be useful in making organisations’ invisible culture and structures visible.

The Vision System provides information about organisations’ ability to strive in one direction, towards a common vision. According to Ekholm (1988; 1989), this system is of importance in order to improve quality work within organisations and includes aspects such as how vision pervade the entire organisation. *The norm system* provides information about the kind of actions and behaviours which are allowed in the organisation, for instance to what extent testing new ideas and making mistakes is allowed. *The sanction system* is closely linked to the norm system since sanctions steer individual’s behaviours. Through sanctions, norms attain a concrete meaning for individuals. This system can be closed and hidden, according to Ekholm, where underlying principles are only known to those who have the power to sanction, or open and transparent to all organisational members - individuals know fully which norms and behaviours are desirable. The sanction system can be seen as the system that brings out certain kinds of behaviours, since sanctions reinforce or balance behaviours, Ekholm argues.

The responsibility and power system provides information about how management is working and functioning and how organisational members behave in relation to management intentions. It is also about how responsibility and power are distributed and how organisational members behave in relation to distributed responsibility and power. *The decision-making system* provides information about

how decisions are made, by whom and how organisational members behave in relation to decisions taken.

The grouping system provides information about the basis of organisational structures in which social psychological forces are channelled. It further provides information about the structures which cause the emergence of particular social patterns within the organisation, i. e. informal groups. *The communication system* provides information about the structure of information flows within the organisation, from top to bottom and vice versa, who informs whom about what and how information flows between organisational members and groups within the organisation. *The evaluation system* provides information about whether if and how the organisation systematically gathers, processes and values information about its outcomes and internal processes. Access to relevant information and questioning about the organisations' internal structures, processes and evaluation procedures is a pre-requisite for effective problem-solving, according to Ekholm. The subsystems are transcending, as Ekholm points out.

I find Schein's and Ekholm's views on the study of organisational culture and informal structures useful. Schein's different levels have been applied in a number of different studies, which shows that his theory has particular value for the analysis of organisational culture. Ekholm's infrastructure systems have been applied in a number of studies of different school-organisations, and have proved to be useful when organisational culture and informal structures are studied. A combination of these theories may therefore be applicable to enable the identification of a university's culture and informal structures. I will use six of Ekholm's subsystems that are relevant in relation to the characteristics of the theoretical model of the learning organisation and integrate them mainly with Schein's level of fundamental assumptions. This will be done in order to identify the university's culture and informal structures and how they match the characteristics of the theoretical model of the learning organisation.

Research Design

With reference to the previous discussion, the research design has been constructed as follows. Different aspects of the theoretical model are assumed to be covered by documentary and interview analysis. The vision system is of importance to the theoretical model since the contents of the vision, the formulation and implementation processes of the vision as well as organisational members' identification with it is a crucial feature of a learning organisation. The communication system is of importance since it provides information about the quality of communication (for instance if dialogue is characteristic) as well as quantity of communication between different organisational levels and units, which is important prerequisites to function as a learning organisation. The quality of communication also influences the ability to question, absorb new ideas and transfer knowledge. In order to identify the university's intentions regarding vision and communication, an analysis of the organisation's official policy documents has been chosen. However, to identify how the university actually works in this regard, there is a need to examine the level of fundamental assumptions. Interviews and analysis of documents from previous studies about the university have therefore also been judged as an appropriate data gathering method.

However, the following four subsystems will not be covered by formal policy documents. Instead, documents that provide information about organisational members' fundamental assumptions will, together with interviews, be applied. The relevance of the vision- and communication systems to the theoretical model was clarified above. The grouping system is of importance to the theoretical model because it provides information about how organisational members are linked to one another, within and between professions and organisational boundaries, which in turn influences the ability to construct and transfer knowledge within the university.

The norm system is linked to the theoretical model as it defines to what degree questioning, experimenting and making mistakes is allowed. Furthermore, the norm system provides information about the ability to absorb and use new ideas, to transfer knowledge and about the allowance of conflicts and what methods that are used for dealing with conflicts.

The sanction system is related to the theoretical model of a learning organisation by providing information as to whether the desired behaviours are re-

warded and undesired behaviours penalized, whether the criteria in the sanction system are known to organisational members, and whether the criteria match the characteristics of the learning culture in the theoretical model. The evaluation system is concerned with the university's systematic problem-solving processes and is assumed to provide information about its ability to learn about its outcomes from the environment, to identify problems, its underlying structures and its ability to solve problems efficiently. This includes system thinking and learning by feedback, i. e. on actions taken.

Note that actual learning processes within the organisation, i. e. subsystems, will not be studied - even though it would be of great interest. The reason for this choice is that it is difficult to identify and describe learning processes within the entire organisation in relation to the limitations in time and resources for this research project. Instead, the focus has been on the university's pre-requisites to function in accordance to a learning organisation, to a given theoretical model. Interviews and document analysis are expected to provide information about the university's culture and informal structures. Since such analysis relies on a limited number of organisational members' experiences, some of its results have been validated by a survey. Method triangulation has therefore been applied. The construction of the survey is based on the main concepts in the theoretical model as well as on the results of the qualitative data analysis. The research design regarding data gathering is displayed in Table 2.

Table 2: Research Design: Data Gathering

Ekholm's Subsystems	Schein's Artefact & Value level	Schein's Fundamental Assumptions
Vision	Policy documents	Documents, interviews, survey
Groupings		Interviews, survey
Communication	Policy documents	Documents, interviews, survey
Norm		Documents, interviews, survey
Sanction		Documents, interviews, survey
Evaluation		Documents, interviews, survey

The study includes a number of analyses that are based on one another. The first analysis is based on qualitative empirical data, collected via interviews and documents. The focus has been on the identification of the university's organisational characteristics in relation to the characteristics in the theoretical model of the learning organisation. Together with the main concepts in the theoretical model, the results of the qualitative analysis have been used when constructing the survey. The survey has been analysed in two different ways. First, the measurement accuracy has been tested using an explorative approach. Then, the results of quantitative data have been analysed descriptively, compared and integrated with the results of the qualitative analysis in each subsystem. The results of the latter analysis have been compared and evaluated with the characteristics of the theoretical model of the learning organisation, on which the conclusions in each subsystem relies on.

The final analysis uses a system theory approach which actually comprises three different analyses. One is based on the results of the explorative test of the survey, one on the conclusions of each subsystem, and one is based on the re-analysis of the results of all empirical data.

Case Selection

Karlstad University is the chosen case for this study. There are a number of reasons for this choice. Karlstad University has formally set down in its vision the aim of becoming “a learning university”, which includes learning associated activities, such as teaching, research and supervision, as well as functioning as a learning organisation. It is therefore of interest to find out if this university lives up to its internal ambitions. Another reason for the choice is convenience and accessibility. I have been working at Karlstad University College, which became in Karlstad University in 1999, in various positions for 14 years. During those years, I have often found myself returning to the question of how the organisation works and why. Situations have sometimes emerged that I have not been able to understand. As a consequence, I have tended to reflect on the invisible, underlying mechanisms that give rise to these situations. The desire to understand my own university has therefore contributed to the choice of study object.

The years as an organisational member have provided me with knowledge about and insights into the organisation that would not be possible for an outsider. I am a part of, have special knowledge of and an understanding about the university's history, processes and intentions. However, this can be an advantage as well as a disadvantage. The advantage is that the internal knowledge I have about the organisation provides a focus on phenomena that might be overlooked by an outsider. According to a number of organisational researchers, such as O'Connor & McDermott (1997), Morgan (1986), Moe (1996) and Söderström (1983), it is often an advantage to study organisations from within rather than from the outside. Being a part of the organisation also means that I have access to it. I have an understanding of the university, its members and processes. Being a part of the organisation might also have contributed to regarding me as a less of a threat than an outsider, which might have influenced data gathering positively.

The disadvantage of studying your own organisation is that there is a risk of becoming "home-blind", i. e. taking certain aspects and phenomena for granted, and therefore excluding them from the study. An outsider can therefore be assumed to observe different aspects than an insider. To be a part of the study-object also risks bringing me too close to the studied phenomena: one may be emotionally involved and this risks colouring the way one perceives the university, to influence the identification of features and the analysis and interpretation of data. I have tried to keep as close to the theoretical model and its main concepts as possible when the interview guide and the survey were constructed, as well as when data have been coded and interpreted. A local research seminar has been used in order to discuss whether the interpretations of empirical data were reasonable.

In order to understand an organisation, Clark (1970; 1972) argues, it is useful to put it in a historical context, to write its "organisational saga". By understanding its history, present events and conditions it is assumed to be more likely that one will gain a more holistic understanding of the organisation. Furthermore, by doing this it becomes easier to predict the future - even though it is not the purpose of this study. Finally, it will probably be easier for the reader to follow the research process and the results if there is an understanding of the study object.

The Saga of Karlstad University

The city of Karlstad has a long tradition of education, as Andersson & Hidén (2003) point out. As early as 1675, Karlstad's first upper secondary school accepted pupils, and in 1843, a seminar for teachers was established. In the early 1960's, a public commission of inquiry examined and suggested the future expansion of higher education. It turned out there was in fact an urgent need for higher education in the region. In particular, there was a need for education in wood engineering and paper processing. Karlstad was considered as an appropriate location for a university college, partly because of its geographical location, and partly because of the long tradition of education. The report resulted in the plan to establish an annex of the Gothenburg University in Karlstad. The annex was established in 1967 and in 1968, the old seminary was transformed into a School of Education. During this time, the university was physically dispersed covering different locations in Karlstad (Andersson & Hidén, 2003; Från högskola till universitet, 1997).

In 1968, a new public Commission of Inquiry was carried out (Högskoleutbildning: betänkande, U 68), where the concept of the university college started to emerge, according to Andersson & Hidén. This resulted in the inclusion of the School of Education in the university annex. As a result, new buildings were erected in 1974 in order to house the new entity in the one building. However, from an organisational perspective, as Andersson & Hidén point out, the School of Education and the Branch of Education were distinctly different. While the School of Education was governed by rules and a strong Rector, the university annex was more dependent on Gothenburg University and its disciplines for its government processes.

The public Commission of Inquiry from 1968, (U68) and a government reform of higher education in 1977 together resulted in all higher education in Karlstad being integrated into the same organisation and Karlstad University College was created (Andersson & Hidén, 2003; Från Högskola till universitet, 1997). This meant, the School of Education was incorporated with the university annex, and together they became the University College of Karlstad. Karlstad University College thereby became distinct from Gothenburg University – even though the college was still dependent on Gothenburg University concerning research, according to Andersson & Hidén.

Complicated and conflicting issues on how to integrate and manage the University College of Karlstad characterised the fusion of the university branch and the School of Education into one organisation, which Andersson & Hidén indicate. Two different cultures were supposed to be integrated. One culture was characterised by authority and one was characterised by, or influenced by, anarchy, according to Andersson & Hidén who also note that a bottom-up process developed the integration process with departments created around disciplines in accordance with academic traditions.

During the eighties, the University College was relatively small. Those employed knew one another, one another's tasks and where to turn to solve problems. The academic staff came from similar academic cultures, most of them came from Gothenburg University. As a result, there was a high degree of consensus within the university college. In the case of recruitment, academic staff contacted old colleagues from Gothenburg University and new colleagues from the same academic culture were incorporated in the organisation¹². Then, for the first time representatives from business life were invited to be a part of the inner life of the university college, influencing the decision-making processes, which were regarded as controversial for academic professionals (Andersson & Hidén, 2003).

In 1987, Karlstad University College formulated a vision to become a university in 2000 (Andersson & Hidén, 2003; *Från högskola till universitet*, 1997). The University College developed a strategy, which included:

- the development of larger and wider educational programmes
- the development of in-depth studies to enable the right to examine bachelor's degrees as well as master's degrees
- the offer of doctoral education for academic teachers
- the recruitment and employment of people with Ph. D. degrees
- the development of a gender equality plan
- the development of stronger cooperation with regional industry and business life, particularly with regard to research issues
- the development of a scientific environment to stimulate the development of a local programme on research education

¹² Private conversations with academic professionals at Karlstad University.

In 1998, the College of Health Science was included in Karlstad University College. At this time, the University College had approximately 10 000 students, 170 doctoral students and 750 employees, 9 of these were professors, 13 assistant professors, 15 senior lecturers and 109 doctors. Still, Karlstad University College continued to expand. In 1999, the University College vision was realised and it became university. As one of the youngest universities in Sweden, the university continues to expand. For example, in 2003 Ingesund College of Music was included in the university. The transition from a university college to a university has resulted in several organisational changes, as Andersson & Hidén point out. Faculties have been developed, old departments have been restructured and new ones have been created, including or excluding disciplines. Academic staff has been recruited, some from business life, while others have been recruited from traditional academic cultures. Consequently, the former common culture has been challenged by the influence of organisation members from other organisational cultures.

Karlstad University is now located under the one roof, but in a number of buildings, which are inter-related with one another. New buildings have been added to the campus area and new ones are planned. The integration of buildings has been regarded as something unique for Karlstad University – and it has been assumed that this will support efficiency and multi-disciplinary cooperation (Från Högskola till Universitet, 1997). When this study was made, the university contained ten departments, a staff population of about 1 100 and approximately 12 000 students (Andersson & Hidén, 2003).

Case Study as a Scientific Method

The concept of case studies is difficult to define, Merriam (1988) and Yin (1981a) claim, since the term is used in many different ways. While the term sometimes is used to illustrate a number of cases and/or sample of cases, which refers to quantitative research, the term is also sometimes used to define a case as a focus for a study which refers to qualitative research, according to Ragin & Becker (1992). The different definitions of case study have consequently raised the question whether case studies are a quantitative or a qualitative research method. However, case studies cannot be reduced to a single data gathering, processing and analyzing method, as Andersen and Ragin & Becker point out,

because the concept permits quantitative as well as qualitative research methods. As in many other research approaches, data gathering, processing and analysis methods are dependent on the purpose of the study.

According to Ragin & Becker (1992), case studies can be defined in four different ways: 1) cases are found, 2) cases are objects, 3) cases are made and, 4) cases are conventions. The first two refer to the understanding of cases as empirical units, while the last two refer to the understanding of cases as theoretical constructions. These four concepts are not absolute, Ragin & Becker argue instead researchers can use several approaches at the same time. For instance, a researcher can see the case as both being found and as an object, at the same time as he/she tries to generate new theoretical categories or case constructions.

Perhaps the most usual definition of case studies is the identification of a limited system as a focus for a study (Andersen, 1997; Merriam, 1988). In this study, Karlstad University as an organisation is the defined system. According to Eckstein (1992), case studies are valuable at all stages of the theory building process, but particularly valuable in the stages where theories are “tested”. Since this study tests one theoretic model’s applicability on a real university organisation, case study is an appropriate approach. Another characteristic of case studies is that they are particularly appropriate when seeking answers to questions that require descriptive or explanatory approaches (Yin, 1994). Since this characteristic matches the research aims and the approach required in this study, the choice seems valid.

Organisations are social systems and accordingly, they are complex. They contain a number of parts, whose inter-relations and interactions are multiple and can be combined in many different ways, according to Merriam (1988) and O’Connor & McDermott (1997). Andersen (1997), Merriam (1988) and Yin (1994) all underline the importance of identifying the system’s parts, relations and interactions in order to provide an understanding of the entire system. Consequently, sub-systems and their inter-relations and interactions within the university have to be defined in order to describe if, and in what way, the university meets the requirements of the theoretical model. As noted, the subsystems are already defined by the use of Ekholm’s (1988; 1989) theoretical framework.

However, as organisations are dynamic, social systems, the subsystems and their links should be understood as contextual (Yin, 1993). This means, the complexity in social systems should not be reduced. By striving to keep the complexity, organisations can be described as an entity, which is the reason why case studies are often viewed as explorative, holistic, close to reality and empirically grounded research according to Merriam (1988) and Yin (1993). Furthermore, case studies can be descriptive as well as explanatory, as Merriam points out. The descriptive approach, Merriam continues, includes the commitment to describe the defined system in as rich and as “dense” a way as possible. Dense description is a term borrowed from anthropology and refers to a complete and literal description of an event or entity, according to Merriam. Consequently, such descriptions include interpretations of the meaning of data in terms of cultural norms, values, rules and deep underlying assumptions in the social structures and events (Becker, 1968; Guba & Lincoln, 1981).

However, there is always a risk in arguing that a researcher is able to present a complete description of an event or entity. Albeit it is not fully possible to take all variables and aspects in social systems into account when you gather data, analyse and interpret them and draw the conclusions. I have chosen to work with a more modest perspective. I intend to make an illuminative description of the university, with the awareness that not everything will be covered. As the study is focused on one single case - Karlstad University and a selection of its subsystems, results are not necessarily applicable to other universities. Even though universities have much in common, it can be assumed that each of them has its own characteristics, i. e. culture and informal structures. Consequently, results from one university are not automatically valid for other universities.

Data Gathering

Document Selection

The selection of documents is based on the relevance of the theoretical model to a learning organisation. However, during the selection process, considerations have also been made as to how to relate them to Schein’s different levels, i. e. whether the documents provide information about the intentional or actual structures and to Ekholm’s definitions of the subsystems. The document selec-

tion will be presented in relation to the theoretical model, and to Schein's levels and to Ekholm's subsystems.

First, *Karlstad University's Vision and Goal Document* was selected. The document provides information about the formulation process of the vision as well as the contents of the vision. Furthermore, there is also information about the intended implementation process of the vision. One aspect in the theoretical model of a learning organisation is a common vision that is formulated by the organisation member's. This means that organisational members can relate themselves and their work to the vision in an integrative way. Accordingly, the document is relevant in relation to the theoretical model. The document expresses the university's external logic, and is related to Schein's artefact and value level. Since the document includes only aspects of the vision, it refers to the vision system only.

Second, *Verksamhetsbeskrivning 2001* (Annual Report 2001) was selected, which is a study of the university's internal processes, i. e. its core processes and how they function conducted by two Ph. D. students on the management's behalf. The study is primarily based on interviews with key individuals within the organisation. The document is related to the theoretical model since it provides information about the university's problem-solving processes, i. e. data gathering, processing and evaluation, i. e. the use of system thinking and the ability to learn from experience. Accordingly, the document refers to the evaluation system. In the event, it turned out to be linked to the vision, communication, norm and sanction system since the document provided information of relevance in these subsystems as well. The character and the contents of the document are related to Schein's level of fundamental assumptions, since the results of the document are based on interviews.

Third, the *Work Environmental Authority Report (2000)* was selected. The Work Environmental Authority studied the university in 2000. The results of the report are based on group interviews, shaped by different professions and genders. The report provides information about organisational members' fundamental assumptions about the university, how it functions, how the groupings are shaped, how communication flows, the quality of communication, norms and sanctions. Accordingly, the contents of the report are linked to Schein's level of fundamental assumptions and the communication, norm and sanction system. Furthermore, the document relates to the theoretical model of a learning organisation since it provides information about the organisational cul-

learning organisation since it provides information about the organisational culture and informal structures, what is allowed and not, and how this is reinforced or balanced by the sanction system, what is communicated, to whom and how.

Fourth, *the Delegation Order of Karlstad University* was selected, a policy document that provides information about the distribution of power and responsibility within the University. Furthermore, and more importantly, it provides information about the intended communication structure. Accordingly, the document is linked to Schein's artefact and value level and to Ekholm's communication system. As pointed out above, the communication structure is of relevance to the theoretical model, since it provides information about the pre-requisites for knowledge transfer and the flow of communication.

Fifth, *the Barometers Reports (2001)* were selected. These reports present the results of two surveys, the *Secretary & Technicians Barometer* and the *Teachers Barometer*, about organisational members estimations about how the university works, i. e. fundamental assumptions, regarding the university's core processes. The survey construction was based on interviews with a selection of organisational members. The Teachers Barometer was sent out to 492 teachers and had a response frequency of 198 (49%), and the Secretary and Technicians Barometer was sent out to 260 and had a response frequency of 160 (61,5%). Accordingly, these documents are related to Schein's level of fundamental assumptions. The survey includes organisational members' estimates across a broad range of different aspects of the university, such as problem-solving processes, communication, vision and rewards. Consequently, the document is linked to the theoretical model as well as the vision, communication, norm, sanction and evaluation system in numerous ways. All the selected documents provide information about the university and organisational members and concerns how it works in 2000/2001.

Interview Guide Construction

Interviews have aimed at identifying Karlstad University's organisational characteristics, and relate them to the characteristics in the theoretical model of a learning organisation. The construction of interview questions has been based on the main concepts in the theoretical model, such as questioning/criticizing, experimenting, absorbance of new ideas, making mistakes, conflicts, knowledge

transfer, the quality and quantity of communication, the university's vision and how it was formulated, the criteria for rewards and penalties, groupings, data gathering, processing and evaluation, i. e. system thinking in problem-solving processes. See interview guide in Appendix No 1.

Interview questions are related to different kinds of information. While some are related to facts, i. e. biographical information about the respondents and their knowledge about the university's policies and actions taken within the organisation, others are related to beliefs and attitudes, i. e. fundamental assumptions about the university and how it works, which has been the key purpose. However, there has been an openness to allow respondents to talk about standards of action and present behaviours, i. e. critical incidents, since it turned out that such "stories" covered many aspects of the interview guide and of the theoretical model. This influenced the interviews in such a way that questions have been adjusted to every interview situation depending on the interview respondents' ability to bring up critical incidents.

Interview Respondent Selection

Interview respondent selection has focused on different professions and positions, as well as on different organisational levels, to reflect the richness of variations within the university. The university's staff files were used to identify potential respondents. I chose not to include any members of the management body of the university as the views of this body have been collected mainly through documents produced at the university of Karlstad. The number of interviews was determined by the need to get enough information in order to construct a survey. When I had met fifteen respondents, this need was satisfied. Table 3 shows the selection of interview respondents and the distribution of professions and organisational membership that the respondents cover.

Table 3. Interview Respondent Selection

Profession	Organisational affiliation
Economist	Central service units
Secretary/technician	Central service units
Secretary	Central service units
Secretary	Central service units
Project assistant	Central service units
Secretary	Natural/technology sciences
Teacher	Social/human sciences
Teacher	Social/human sciences
Director of Studies	Social/human sciences
Director of Studies	Social/human sciences
Ph. D. Student	Natural/technology sciences
Professor	Natural/technology sciences
Professor	Social/human sciences
Head of Department	Social/human sciences
Head of Department	Natural/technology sciences

The interview respondent selection can be related to the number presented in Andersson & Hidén's book. According to them, in 2001/2002, there were 180 individuals' referred to as professors, ph. D. and research assistants, about 300 technical staff/secretaries, about 100 Ph. D. students and about 250 teachers (assistant lecturers). Interview respondents are not statistically representative, nor are they proportionally representative in relation to the numbers presented by Andersson & Hidén. Instead, they should be regarded as representative for the most common professions that the university contains.

As the table shows, professions such as professors and heads of departments are equally represented by natural/technology sciences as well as social/human sciences, while director of studies and teachers are drawn from social/human sciences only. The reason for this skewing is that the point of satisfaction was reached before an equal frequency in all professions and organisational membership was covered. An equal frequency has not been necessary either, but there has been an openness to identify subcultural differences. As may be noted, the respondents' gender has not been shown in the table, because of the risk of identification of the respondents. For further discussion about this, see Ethical Considerations later in this chapter.

The Interviews

Two test interviews were conducted in order to evaluate interview questions. It turned out that interview questions seemed to be clear and understandable to respondents and the test interviews proved satisfying and resulted in rich information about the areas of focus.

Contact with the “real” interview respondents was undertaken by e-mail, two at a time. However, as I have been a member of the organisation for such a long time, some of the interview respondents were well known to me, while others were not. This has influenced the way I have written the e-mails to the respondents - to those I knew beforehand I have been more informal in the way I express myself, while I have been more formal to those I did not know previously. However, all respondents received the same information about the study. The information given was: the purpose of the study, that the study was a part of my Ph. D. studies, that I intended to interview them, that the interviews were estimated to last about an hour, that their identity as well as information given would be confidentially handled in accordance with research ethics, and that they could choose the location of the interview, their office or mine.

The reason why I approached the presumptive respondents in different ways was that it seemed peculiar to behave formally towards persons to whom I usually act informally. Towards people that I did know from earlier I behaved more neutrally. Seven respondents were known to me before the interviews, while eight were not.

All except one were willing to participate. One person did not respond at all and no reason was given. Another person with the same profession, gender and organisational membership was then presented with the offer to participate.

Respondents chose the location of the interviews, their own office or mine. The purpose was to give the respondents the opportunity to choose the place where they felt most comfortable and relaxed - an aspect that was assumed to influence the interviews. All respondents except two chose my office, because they felt that the risk of being interrupted during the interview was minimized in my office. The interviews were taped.

The interview guide was semi-structured and has mainly served as support to make sure different aspects in the theoretical model were covered rather than followed on the behalf of critical incidents, as they provided rich information and covered different aspects of relevance to the theoretical model. All questions in the interview guide have been asked or covered in the interviews, but in a different order since I have taken respondents' answers, their areas of interest or examples, i. e. critical incidents, into consideration. The interview questions thereby have been adjusted to the context. The focus has been on the relationship between myself and the respondents with the purpose of creating a sense of trust and as a result, some of the interviews have been characterised more as conversations, aiming toward a common understanding, where I as a researcher have somehow steered the conversation. During the interviews I have tried to view the respondents' information from their perspective. However, such an interpretation may be coloured by my own understanding of the organisation and in order to avoid such interpretation, I have sometimes concluded with how I understand what the respondents have said and asked if I have understood them correctly.

The atmosphere of the interviews has had an informal character, even in the cases where I did not know the respondents before the interviews. Maybe this is a result of my personality, or the mix of my personality and the respondents, and/or the subject of the interviews. Whatever the reason, this seems to have contributed to a high degree of openness during the interviews. Respondents have also showed high levels of engagement in the questions raised in the interviews. As a result, the interviews took longer than expected. Most of them took 1 ½ - 2 hours. Note that the interviews were carried out in 2001. In other words, qualitative data is mainly based on information from 2000/2001.

Survey Respondent Selection

The purpose of the survey was to test the measurement accuracy in an explorative way as well as to validate the results of the qualitative analysis. As the qualitative analysis was based on organisational members' understandings, it was seen as proper to turn to these once again.

Eight out of ten departments were selected for the survey study. The College of Music, Ingesund, was excluded because it had recently been included within the

university and its staff were not likely to be able to estimate different aspects of the university. The Department of the Science of Education was excluded since it was judged as inappropriate to include my own department in the study. The selection of eight departments resulted in a sample of 777 individuals, representing all professions on departmental levels.

Survey Construction

The survey construction was based on the results of the document and interview analysis as well as on the main concepts in the theoretical model of a learning organisation. The first part of the survey, questions 1-6, includes background information about the respondents. Questions 7-15 aim to provide information about the university's norm system and are mostly formulated as hypothetical scenarios in the university with different statements, which the respondents evaluate. Questions 16-20 aim to provide information about the university's sanction system and are also formulated as hypothetical scenarios with different statements that are evaluated. Questions 21-22 aim to provide information about the university's vision system where respondents estimate how the vision was formulated and how they relate to the vision. Questions 23-25 aim to provide information about the university's evaluation system and are mostly formulated as hypothetical scenarios in the organisation with different statements that are evaluated. There is also a question about how respondents view the university's ability to identify and solve problems. Questions 7-25 have been treated as metric data.

Questions 26-28 aim to provide information about the university's communication system and the respondent defines what kind of communication that characterises different levels within the university and with whom they communicate. Consequently, this data is non-metric. Question 29 aims to provide information about the university's grouping system and respondents describe with whom they cooperate and to what extent. Accordingly, these data are a mix of non-metric and metric. The survey is presented in Appendix No 2.

The use of hypothetical scenarios in the survey was based on the assumption that it would affect the validity and reliability negatively if "real" events were used. Organizational members in different positions and levels were assumed to experience different events and to deal with rather different problems within

the university. If real events had been used, some respondents would likely not be able to answer at all, while other respondents probably would answer easily with their insight in the chosen scenes. By using hypothetical scenarios, all respondents were assumed to respond from the same point of view. In order to increase the reliability, the concepts of the theoretical model and results of the qualitative study have been broken down into several questions, statements or scenarios, positively as well as negatively formulated.

The survey was tested in a pilot group of eight participants, both as a paper-based survey and as a web-based survey in order to find out which method of distribution that was the most appropriate. The pilot study has also aimed to identify weaknesses in the survey questions/statements or the answer alternatives to optimize a response-friendly survey. The survey construction and the different methods of distributions were discussed in the pilot group.

It turned out there was a concern that the survey was too extensive, which might influence a respondent's willingness to respond in a negative way. Therefore, the number of questions/statements was reduced. Despite the shortening, the survey can be considered as extensive. However, the extent of the survey needs to be related to the empirical exploration of a theory that has not been empirically tested before. By reducing the survey to a greater extent, a respondent's willingness to respond will probably increase, which will influence reliability positively on the one hand. However, it would probably affect validity as well as reliability on the other hand since the measurement accuracy of the theoretical model might decrease. Consequently, even though the number of questions/statements was reduced, there were still arguments in favour of allowing it to remain quite extensive. The pilot group also judged that the paper-based survey was more answer-friendly than the web-based version and their concern influenced the choice of a paper-bound survey.

Implementation and Distribution

The survey has been discussed and implemented at different organisational levels in order to get approval to distribute it. First, the survey was discussed with the vice-rector, who discussed it within the management body which gave its approval. Second, the study was presented to the Heads of Department, who approved the distribution of the survey in their departments.

The survey was sent out to by internal mail to 777 potential respondents, in eight departments, in October 2004. The first data gathering resulted in a response frequency of 165. A reminder was sent together with new surveys to the respondents. At the same time, the Heads of the Department were contacted and asked to send out an e-mail to their staff, recommending the staff to respond to the survey.

Data Processing & Analysis

Documents have been reviewed repeatedly, with particular focus on identifying contents that are of relevance to the theoretical model. Using the contents of the documents however does not mean that there has been a content analysis as Silverman (1995) uses the term. Silverman views content analysis as textual investigation, where categories are created and the number of instances when those categories are used are counted and presented. Instead, the documents have been analysed in order to identify the university's intended or actual logic, depending on the character of the contents. While previous studies refer to the university's actual logic, i. e. Schein's fundamental assumptions, policy documents refer to the intended logic, i. e. Schein's artefact and value levels. Where information of relevance regarding the characteristics of the university's organisation and to the theoretical model has been identified, it has been sorted and coded into the pre-defined subsystems. While most documents have referred to several subsystems, others have referred to one only. See Table 4.

Table 4. The frequencies of use of documents in the results in each subsystem as well as totally. V= vision system, G= Grouping system, C= Communication system, N= Norm system, S= sanction system, E= evaluation system.

	V	G	C	N	S	E	Total
Document							
Vision & Goal Document	5	-	-	-	-	-	5
The Annual Report	-	-	-	1	-	7	8
The Work Authority Report	-	-	9	3	-	-	12
The Delegation Order	-	-	1	-	-	-	1
The Teachers Barometer	-	-	4	4	2	-	10
The Secretary & Technician Barometer	1	-	2	3	1	2	9
Total	6	0	16	11	3	9	

Table 4 shows there is skewness in how often documents have been used as a basis for the analysis. For instance, the results of the communication system refer to document analysis 16 times, while the results of the grouping system do not refer to documents at all. Furthermore, while the Work Authority Report has been referred to 12 times, the Delegation Order has only one been referred to once. The reason why there are differences between the results' reliance on and references to documents totally as well as between the subsystems relate to the contents of the documents, to the definition of the subsystems. While the grouping system is concerned with informal social patterns, which the documents do not cover, the communication system deals with formal as well as informal patterns, which are covered by a number of documents. Note that the communication as well as norm system covers more concepts in the theoretical model compared with the other subsystems, which explains parts of the skewness.

Transcribed interviews have been converted to the qualitative computer system QSR N'Vivo (Qualitative Solutions and Research software product). Each interview has been read through repeatedly during the coding process. Selected parts of the interviews of relevance to the theoretical model have been coded into the subsystems, in accordance with Ekholm's (1989) definitions and the subsystem's relations to the theoretical model. This means that the interview material has been interpreted, or at least undergone a first interpretation and been coded at the same time. During the coding process, it became apparent that the subsystems were overlapping and transcending which is not surprising

with reference to Ekholm's statement. This resulted in the questioning of the definitions of the subsystems in order to distinguish the subsystems from one another. Parts of the material were subsequently re-coded. However, the contents of the subsystems are still somewhat overlapping and the boundaries are blurred and therefore, some quotations from the interviews are referred to in more than one sub-system.

The contents of each subsystem have then been analysed in relation to the characteristics of the theoretical model of a learning organisation. The theoretical characteristics have thus been kept in mind during data analysis, where the focus has been on the identification of organisational characteristics of Karlstad University, which have later been related to and compared with the theoretical model.

Qualitative data turned out to be rich, so there was a need for data reduction. This has been carried out during the analysis process in accordance with Miles & Huberman's (1994) suggestions. Data has thus been selected, focused and abstracted using labels related to organisational characteristics, in order to organise data in such a way that conclusions could be drawn. Abstraction has been done based on all empirical data together. To provide an overview of the results of data and how they have been interpreted, they have been displayed in tables as well as described in text.

Quotations from interview data have been used in order to illustrate how interpretations and conclusions have been made. However, information that may reveal the identity of interview respondents has been removed - often marked by "X" in the text. The use of quotations is not spread equally among the interview respondents. While some interview respondents are used more frequently, others have been quoted only a few times. (See Appendix 3 for an overview of quotations from the interviews).

The respondents that I have quoted are not systematically related to me personally. The question rises if the skew in the use of quotations produces problems of validity. If interpretations and conclusions were drawn only on the basis of one respondents' statements and then generalised to the organisation, that would have been the case. After all, it would be invalid to claim the organisational culture and informal structures have been identified on the basis of the perception of one single respondent. As stated, organisational culture and in-

formal structures are the sum of organisational members' fundamental assumptions, however they are not identical for each organisational member but similar enough to be understood in the same way (Dixon, 1997). The identified organisational characteristics that are based on the interview material rely on interview respondents perceptions of the organisational culture. This means that the identified organisational characteristic has to be identified in most interviews in order to be considered as valid and included in the results of the study. An exception from this is when differences in understandings have been identified that may be due to sub-cultural differences, which sometimes have been judged as important to point out.

I have chosen to use the best quotations to illustrate how empirical data has been interpreted, which also explain a certain skew. As it turned out, there were huge discrepancies among the respondents' ability to express themselves verbally, where some seemed to easily express their understandings in more exact words, while others expressed the same understanding in a longer set of sentences. In an extreme case, the same understanding required an interpretation of the entire interview, and referring to such a respondent would only increase text mass, decrease the readability of the text and confuse the reader as to how interpretations were made. Instead, it has been judged as most appropriate to shorten the text mass by using respondents' quotations that are more precise, even though it is at the cost of a more equal spread among respondents. After all, most important has been to identify and illustrate different qualities of the organisational culture, rather than to make a quasi-quantification of the frequency of quotations used. It should be pointed out that in a minor number of cases the same quotation from the same respondent has been used to describe aspects in two different sub-systems.

Coding of the survey started as soon as responses were sent back. Background data, covered by questions 1-6 and the answers given to questions 26-29 has been coded into ordinal data, while the rest of the questions (Qs 7-25) were coded into an interval scale. The decision to use an interval scale is based on the judgement that interval scales are the most appropriate measurement scale since they have an arbitrary zero point. Negative questions/statements were recoded in the same scale as positive questions/statements. Since one purpose of the survey was to explore its measurement accuracy, data processing has been meticulous. No manipulation of data, such as replacing missing values with mean values, has been done.

The response frequency was 28 % (217 of 777), which is extremely low from a statistical perspective. This has consequently influenced the ability to conduct mathematical operations and draw statistical generalisations negatively, and will soon be discussed. The exploration of the patterns in the response frequency reveals that 56 % of the respondents are women and 44 % are men. See Table 5.

Table 5. Response frequency and gender.

	Frequency	%	Valid %
<i>Valid</i>			
Women	120	55	56
Men	94	43	44
Total	214	98	100
<i>Missing</i>			
System	3	2	
Total	217	100	

Response frequency has been cross-tabulated with gender and departments and then compared with the population, see Table 6.

Table 6. Response frequency cross-tabulated with gender and departments, compared with the population within the entire university.

	Respondents			Entire university		
	F	M	Tot	F	M	Tot
Department						
Social Sciences	28	25	53	88	81	169
Health & Caring Sciences	31	1	32	69	2	71
Business & Economics	8	19	27	43	49	92
Information Technology	13	14	27	30	53	83
Engineering, Physics & Mathematics	10	13	23	38	86	124
Chemistry	9	11	20	34	44	78
Environmental Sciences	2	4	6	24	25	49
Culture & Communication	17	6	23	68	43	111
Total	118	93	211	394	383	777
<i>Missing values in the study= 6</i>						

The table show that 30% of the women have replied on the survey, compared with 24% of the men. A further analysis of the response frequency revealed that there are quite large differences in the response frequency between the departments as the responses varied between 12% - 45%, see Table 7 below.

Table 7. Response frequency in the study compared with the population, also illustrated in percentage.

	Total frequency in the study	Total frequency in the population	%
Department			
Social Sciences	53	169	31%
Health & Caring	32	71	45%
Business & Economics	27	92	29%
Information Technology	27	83	32%
Engineering, Physics & Mathematics	23	124	18%
Chemistry	20	78	26%
Environmental Sciences	6	49	12%
Culture & Communication	23	111	21%

No explanations to these differences have been identified, and the skewness in the responses between the departments as well as gender should therefore be considered before making decisions about how to use the data. Furthermore, in order to explore data, departments and professions have been cross-tabulated, see Table 8a and 8b.

Table 8a. Cross-tabulation: Distribution of Departments & Profession, in frequencies.

<i>Department</i>	Social Sciences	Health & Caring Sciences	Business & Economics Sciences	Information Technology Sciences
Profession				
Secretary, technician, engineering, economist	2	7	3	8
Project	7	-	1	-
Teaching	12	18	7	8
Teaching & Research	18	3	12	5
Research	2	-	-	-
Ph. D. Student	9	1	4	3
Administration departmental level	-	2	-	1

Table 8b. Cross-tabulation: Distribution of Departments & Profession, in frequencies.

<i>Department</i>	Engineering, Physics & Mathematics Sciences	Chemistry Sciences	Environmental Sciences	Culture & Communication Sciences
<i>Profession</i>				
Secretary, technician, engineering, economist	2	3	-	1
Project	-	-	-	-
Teaching	9	2	4	10
Teaching & Research	8	4	-	5
Research	-	-	-	-
Ph. D. Student	2	8	1	1
Administration departmental level	-	-	-	2

Total 195 of 217. Missing values: 22

The tables show that 26 secretaries/technicians/engineers/economists have participated, as well as 127 from the professions of teaching and research and 6 from departmental administration, however there is differences in professions responses between the departments in the material. These differences together with the already identified skewness in the material have resulted in an analysis of the reasons.

Missing Data Analysis

External Missing Values

There is no doubt that a response frequency of 28 % is, from a statistical point of view, extremely low. Statistical results, i. e. inference statistics, based on such data are assumed to be biased to the extent that the analysis is influenced by the missing data and statistical generalisation becomes impossible. The question arises whether the response frequency is caused by systematic and/or unsystematic measure errors?

Systematic measure error relates to biased sample selection, to put it briefly. In this study, the respondent selection is not random, or “snowballed”. Instead, it

is based on a total selection of eight departments and consequently, the selection has not created systematic errors. A second aspect that might produce systematic measure error is biased response sample, i. e. if the sample that responded to the survey is not representative of the organisation. In order to answer that question, there is a need to explore external missing values and compare them with those of the ones who responded. If they do not correspond with one another, the results of the survey analysis cannot be statistically generalised to and valid for the entire organisation. However, it turned out that such an external missing data analysis is difficult to carry out, since the university's staff files are not divided into the same professional categories as in the survey. For example, a senior lecturer can have tasks as A) only teaching, B) only research, C) both teaching and research, D) project and/or, E) departmental administration. As a result, it is difficult to identify organisational members, to compare them with the respondents in the study. Consequently, no conclusions can be drawn as to whether the response group corresponds to the selected respondent on the eight departments.

If an external missing data analysis had been possible to do, and I had found that the response group did not correspond with the selected respondents, this would have resulted in unsystematic errors. Such an outcome would not necessarily have caused too many problems for the study since biased response groups can be weightened and thereby be made equal to other groups and representative of the population. Such procedures make statistical generalisation possible. However, since there is uncertainty as to whether the response group corresponds with the selected respondents or not, such procedures have not been applied.

As it is not possible to conduct a systematic external missing data analysis, the underlying reasons as to why people have chosen not to answer can only be discussed. First, the workload among the staff was heavy, which might have influenced their motivation to respond to the survey. Second, during data gathering, the organisation was reviewed to reduce costs through an extended reorganisation, cutting courses and staff dismissals. Accordingly, the staff may not have felt motivated at work at that time and this may also have negatively influenced their motivation to respond to the survey. Third, respondents' motivation to respond to the survey might also be explained by the content and construction of the survey. Regarding construction as has been pointed out, the survey was extensive containing many questions/statements in order to test the

concepts of the theoretical model and to validate the results of the qualitative study. As identified, the explorative approach required the extended survey, however it may have influenced the will to respond negatively. The formulation of hypothetical scenarios might also have influenced the participation rate as some respondents may have experienced difficulty in relating to them.

Altogether, there are several factors which may explain the low response rate. Naturally, the low response has led to exclude all operations where the aim was statistical generalisation. Instead, the survey will be used in two different ways. First, it will be used to check the results of the interview- and document analysis, i. e. that survey responses will be used descriptively rather than explanatory. This means that the survey responses will be regarded as extended interviews, with pre-defined multiple choice alternatives. Second, the survey responses will be used to evaluate the measurement accuracy of the survey in relation to the theoretical model in an explorative way. This means that focus will stay on analytical and theoretical generalisation, which the low response rates is enough and valid for. In order to make such analytical generalisation possible, data are explored by the use of multivariate data reduction methods, in the search for categorizations and/or dimensions.

Internal Missing Values

During the coding process, a construction error was discovered, in question 5, which influenced question 6 and consequently, these questions were excluded. Some respondents found it was difficult to have an opinion on hypothetical scenarios and therefore did not answer some of the questions within the survey. A small number of respondents have only responded to parts of the questions in the survey and the reasons for this can only be discussed. One reason might be that these respondents did not think these questions had any relevance for them. Another reason might be that these respondents thought the survey was too extensive and took too much time to respond to, therefore they chose a selection of questions to respond to. However, few items had missing values of more than 10 % and those items have been excluded, since they were judged to influence the reliability negatively.

The impact of missing data is detrimental not only through its potential “hidden” biases on the results but also in its practical impact on the sample size

available for analysis (Hair, Anderson, Tatham & Black, 1998). For example, if remedies for missing data are not applied, any observation with missing data on any of the variables will be excluded from the analysis. However, missing values have not been replaced in this study, since there were not so many that they produced problems, also because the survey took a deliberately explorative approach.

The development of a measurement of the theoretical model of the learning organisation with an explorative approach has resulted in a particular interest in the analysis of possible measurement error. Measurement error is the degree to which the observed values are not representative of the “true” values and they have many possible sources. According to Hair, Anderson, Tatham & Black (1998) these range from data entry errors to the impreciseness of the measurement and to the inability of respondents to provide information accurately. However, all variables that are used in multivariate techniques are assumed to have some degree of measurement error, which to some extent influences the observed or measured variables. An observed variable can represent the “true” as well as the “influence” level at the same time. When such variables are computed in search of correlations, the “true” effect can be partially masked by the “influence” measurement error which weakens the correlations in the set of variables, as Hair, Anderson, Tatham & Black point out.

In order to reduce measurement error, issues of validity and reliability of the measurement have to be considered. However, accuracy does not ensure validity, as stated by Hair, Anderson, Tatham & Black. To increase validity and reliability, the survey construction was based on the theoretical model, i. e. measuring the presence of the concepts in the theory of a learning organisation and on the results of the qualitative analysis which were also based on the theoretical model. So far, the validity of the measurement instrument can be assumed to be satisfactory. The same aspect has been considered repeatedly in many cases and it has sometimes been considered positively as well as negatively to avoid response set effects. The same questions have also been asked relating to different organisational levels so respondents did not have to estimate several organisational levels at the same time. The possibility to use the “don’t know”-alternative aimed at 1) ensuring that respondents did not make estimates that were not “true” for them and, 2) to measure the uncertainty and vagueness within the university which was assumed to exist, based on the results of the qualitative study. In order to increase reliability, summary scales have been cre-

ated, whereby several variables have been put together in a composite measure to represent a concept.

Index Construction

Different sets of variables that measure the same or similar concepts and in the same subsystem were tested by the reliability test Cronbach’s alpha. This resulted in nine indexes. More detailed information about the index construction is provided in Appendix No 4. In Table 9, the indexes relations to subsystems and each alpha value are presented.

Table 9. The indexes of the subsystems and alpha values in each of them.

Index No	Subsystem	Alpha value
1	The Norm System; absorbance of new ideas	.82
2	The Norm System; knowledge transfer	.67
3	The Norm System; experimenting and mistakes	.73
4	The Norm System; conflicts	.69
5	The Sanction System	.84
6	The Vision System	.64
7	The Evaluation System	.85
8	The Communication System	.66
9	The Systems of Groupings	.76

The alpha values in the indexes vary between .64 and .85 and thereby provide a satisfactory image of the reliability of the measurement. Note that the norm system was divided into four different indexes as this subsystem measures several concepts of the theoretical model compared with the other subsystems.

Analysis

In order to find out the accuracy of the measurement, the indexes have been tested in factor analysis. The advantage of factor analysis is the possibility to test the inter-correlation between a large number of variables where underlying structures and dimensions can be identified. Such identification of structures and dimension can be further examined and compared with theory. Furthermore, in case of such identification, factor analysis also provides information about the extent to which the included variables contribute to the explanation of the variances in the structure.

However, Hair, Anderson, Tatham & Black (1998) point out that other tests can be used to examine inter-correlations among a set of variables. For example, by the use of cluster analysis objects can be classified, which could have been useful in this study. However, cluster analysis is the only multivariate technique that does not estimate the variate empirically. Instead, the researcher has to specify each variate. This makes the analysis process vulnerable since it becomes dependent on the researcher's ability to define the variate, so this technique was excluded.

A similar test that is possible to use is multidimensional scaling, which results in perceptual maps that illustrate the variables in the distribution of variables in dimensions. However, Gorsuch (1983) and Hair, Anderson, Tatham & Black argue that such a test is often used as confirmatory, i. e. to test a theoretical model, where thoughts about the structure of the data already exist. This means that the confirmatory approach is used in order to identify to what extent the data meet the expected structure. However, the theoretical model has not been tested empirically before and is not sufficiently developed to use for a confirmatory solution.

Factor analysis together with an exploratory approach has been judged as the most appropriate method in the search for structure/structures among a set of variables in order to reduce data and relate the identification of dimensions to theory. However, different factor methods can be used in the exploratory approach. The principal factor solution has been applied, since it corresponds with the criteria mentioned above and because of its usefulness in different situations. In the principal factor analysis, factors can be extracted from the correlation matrix in order to improve the factors. Principal factor analysis can also be rotated, which means that the factor axes can be adjusted in order to achieve a more meaningful factor solution, as Gorsuch and Hair, Anderson, Tatham & Black point out. Such processes are particularly useful when interpreting factors. In unrotated factor solutions, the first factor often tends to be more general and accounts for most variance in the test, while the other factors are more based on the residual amount of variance (Hair, Anderson, Tatham & Black, 1998). There are different factor rotation methods that can be applied. In the orthogonal rotation, the axes are rotated 90 degrees, measuring the independence between the factors, while the oblique rotation allows correlated factors. Since the purpose is to explore the measuring accuracy of the theoretical

model, it is more interesting to measure the independence between factors and therefore the orthogonal rotation has been used.

According to Hair, Anderson, Tatham & Black, factor loadings greater than .30 are considered as the minimal level, .40 as more important and greater than .50 as practically significant. However, the practical and statistical significance of the factor loadings are related to the number of respondents. The lower the factor loading, the greater the sample size required.

System Theory Analysis

The results of the analysis of all data were intended to be analysed from a system theory perspective in order to understand how the subsystems and the organisational characteristics are related and interact, i. e. how they work and influence the university's ability to meet the requirements in the theoretical model. In the following, system theory will be defined and system theory analysis and its implications on organisational studies will be discussed briefly.

Like case studies, systems are defined as limited entities that contain a number of parts, i. e. subsystems. System theory is defined in different ways. Norrbom (1971) defines system theory as follows:

System theory can be referred to as theories of how different systems are constructed, how they should be constructed and how they function and behave.
System theory mostly concentrates on the relations between and structures of the elements rather than on constant properties in the elements.... (later)... However, this means that system theory can be seen as a perspective rather than a theory
(Norrbom, 1971, pp.10 - my translation)

Arbner & Bjerke (1977) distinguish three different system models. The first is the mechanical system model with a focus on limited and closed systems, where organisations are not related to and do not interact with the environment or to its parts. This perspective is not relevant in this study, since the theoretical model of a learning organisation is based on the assumption of an open system.

The second model is the biological system with the focus on homeostasis processes and the third is the self-organizing system model with the focus on the open, learning and restructuring system. In my view, the distinction between these two latter models is confusing since they refer to the same characteristics.

The concept of homeostasis evidently refers to measurement and self-regulation, i. e. self-organisation with the ability to restore equilibrium (Morgan, 1986). Arbnor & Bjerke's (1977) second and third models are therefore integrated into one organic and self-regulative model, which will be applied in this study. This indicates that a learning organisation is perceived as an open system with the ability to learn and restructure itself.

System theory principles are applied in a variety of fields. For example, they are used in modern political science, in the social sciences and organisation theory, according to Gorpe (1978). Furthermore, Gorpe continues, they can be applied in the development of the analysis of surgery and computer systems. Here, system theory principles relate to the application of organisation theory. Another argument for using system theory analysis is its previous influence on the definition of the concepts of organisation and organisation theory, according to Söderström (1983).

Norrbom (1971) and Miles & Huberman (1994), argue that it is correct to apply system theory when it comes to mapping, describing particular relevant elements and their inter-relationships with a certain problem in order to analyse, construct, and improve systems or to plan changes in systems. In other words, system theory can be used analytically as well as normatively, which Söderström (1983) emphasises. In this study, system theory will be employed in order to analyse and understand how the university's subsystems and organisational characteristics interact and have an influence on the university's capacity to function in accordance with a theoretical model of a learning organisation. This analysis may result in indications of how to improve the university's learning capacity.

In system theory analysis, organisations are studied as an entity (O'Connor & McDermott, 1997; Söderström, 1983). However, organisations contain several subsystems. Like the case study approach, the subsystems' relations and interactions have to be identified in order to understand the entire organisation. In this study, Karlstad University has been divided into six of Ekholm's subsystems. This means, the focus is on particular subsystems of importance from a learning point of view in order to identify the university's culture and informal structures and how they influence the university's pre-requisites for functioning as the learning organisation.

Relations and interactions between the subsystems have been identified, based on different kinds of data, from the results of the previous analyses. The first system theory analysis was based on the results of the factor analysis and focused on the relations and interactions between the identified components. The second system theory analysis, based on the conclusions of the subsystems (where all empirical data were used), has focused on the relations and interactions that emerge when the conclusions from each subsystem are summarized. The third system theory analysis, based on a re-analysis of empirical data in each subsystem, differs from the two first ones. Here, the focus has been on the identification of organisational characteristics common to the subsystems. The analyses aim to contribute to providing a description and understanding of the complexity of the interactions between the subsystems.

During the analysis a particular focus has been placed on how subsystems are linked and how the relations and interactions between subsystems are expressed, i. e. what sustains them, in what way do they interact and how do these relations and interactions influence the university's pre-requisites for functioning as a learning organisation. In order to describe this, the main concepts in system theory, *reinforcing* and *balancing feedback*, have been applied. Reinforcing feedback produces more of what already exists, or that is put in within the system, while balancing feedback is the force that opposes changes and keeps the system stable and coherent with its internal goal, equilibrium (O'Connor & McDermott, 1997). This means, systems have the ability to measure, otherwise they would not be able to identify the discrepancy between where it is and where it ought to be, as O'Connor & McDermott point out. In theory, this means that not only have the subsystems been analysed, they have also been synthesized, in order to provide a holistic image and understanding of the entire organisation. This is particularly important from a system theory perspective, since the organisation as an entity has properties beyond the subsystems. The properties emerge only when the subsystems are put together, according to O'Connor & McDermott, or as Wilber puts it:

You can take a watch apart and analyse its parts, but they won't tell you the time of the day (Wilber, 1996, pp. 25)

System theory analysis has been criticised for a number of reasons. For example, system theory has been accused of neglecting individuals' actions within organisations and avoiding power and conflict aspects within organisations (Silverman, 1979). However, as Silverman points out, these aspects can be in-

cluded in a system theory approach depending on the researcher's interests and the purpose of the study. Furthermore, system theory has been criticised for the avoidance of historical contexts and reliance on the unrealistic perspective of harmony (Abrahamsson, 1975). Once again, such criticism should be directed toward the researcher rather than to the system theory itself. After all, the researcher defines the boundaries of the system and what is included in it.

Another criticism is the use of hierarchies within the system theory approach. Wilber (1996) argues that the a denial of hierarchies is denial of natural and social order as well, where hierarchies are included in everything, in language and sentences, in the human body and social interaction, internally as well as externally. In other words, there are hierarchies whether we want them or not, no matter what they are called. Therefore, as Wilber argues, it is better to include the hierarchies in research than to ignore them.

System theory analysis has also been criticised for reductionism, i. e. reducing individuals and social structures into mechanical functions. The purpose of this study is to provide an understanding of a university by studying its culture and informal structures. In order to do so, its subsystems have been studied, by document, interview and survey analysis, which means information from individuals. This information has then been abstracted into a system theory analysis in order to understand the organisation from a learning point of view. Does this abstraction reduce individuals? Not necessarily. By studying culture and informal structures, an understanding of individual behaviour can emerge. After all, structures are constructed and reproduced by individuals. As do Danermark, Ekström, Jakobsen & Karlsson (1997), I see a need to separate social structures from individuals in order to understand social systems. After all, it is individuals who create the culture and structures in social systems, which influences individuals and their behaviours.

The criticism of reductionism in system theory analysis is particular interesting, since one of the fundamental assumptions in system theory is to keep the dynamic complexity in social systems, rather than to reduce it. It is true that the entire organisation has been divided into different subsystems which are studied individually. However, the results of the subsystems are, as mentioned, then synthesized, using the system theory perspective in order to provide a holistic understanding of the entire university.

Validity and Reliability

According to Salner (1989), human science research has been criticised as being invalid because it is not objective. However, as Salner argues, human science is based on social phenomena and constructions and therefore such research cannot be based on objective facts that are waiting to be found empirically. Instead, human science research is based on interpretation which can be grounded in different epistemological and theoretical perspectives, and therefore the concept of validity refers to other qualities than in natural science and technology. This study is based on the interpretation of different qualitative and quantitative data related to a constructed model of a learning organisation, mainly using the open system theory perspective. The study fulfils the requirement of coherence between aims, the choice of theoretical perspective on the one hand, and the systematic process to methodologically concretize these aspects on the other hand.

This study relies on the analysis and results of three different empirical sources, documents, interviews and a survey. These analyses have been related to the pre-defined subsystems and to the main concepts of the theoretical model. Parts of the results of the document and interview analysis have been used when constructing the survey. All results from the qualitative analysis could not be validated by the survey, since the survey turned out to be too extensive anyway. The extent of the survey may have influenced the response frequency negatively, which in turn has influenced what mathematical operations it has been possible to perform. However, the survey has been used exploratorily as well as descriptively. The survey has therefore not been used for more than the response rate allows, and its validity as well as reliability has been discussed during the description of data processing and analysis.

When it comes to issues of validity and reliability in the qualitative study, the standardisation of methodological process is particularly important, as Silverman (1995) argues. Regarding validity in the document analysis, contents of importance for the characteristics of the theoretical model have been focused on and sorted into the subsystems. The sorting process has been based on the definitions of the subsystems and how different aspects in the subsystems relate to the main concepts of the theoretical model. This systematic process has been

carried out in such a way that other researchers probably would make the same interpretations and judgements.

A similar procedure has been used in the interview analysis. First the interview guide was constructed to cover the characteristics and main concepts of the theoretical model. Second, the questions have been included in each interview even though they have not been asked in the same order. In cases where respondents talked about critical incidents and talked about aspects related to the questions in the interview guide, these questions have been excluded since they have already been covered in the interview.

Transcribed interviews have been analysed and coded repeatedly. Coding has been based on the characteristics of different subsystems that relate to different concepts of the theoretical model. Consequently, data have been coded into these subsystems that sometimes are transcending. There is always a risk that another researcher would interpret, judge and code somewhat differently. However, as the definitions of each subsystem and how they are related to different aspects of the theoretical model has been described, the study can meet the demand to be replicable.

Data in each subsystem have been analysed in the search for identification of organisational characteristics that are related to the characteristics in the theoretical model of a learning organisation. Data can always be interpreted differently. For this reason, perspectives of interpretation of data in one subsystem have been discussed in a local research seminar. Quotations from documents as well as from interviews were used in the presentation of the results to illustrate how conclusions have been reached and by this means others have been able to follow the analysis procedure used in this study and to make critical remarks. The results of the survey have been compared and integrated with the results of the qualitative analysis. It is the results of these three empirical sources, when available, put together in each subsystem that are the basis for conclusions and are generalized to the organisation. However, the generalisation should be seen as tendencies from a qualitative point of view rather than from a statistical one.

A closer analysis of the results' reference to empirical sources reveals that there is a difference between the subsystems. The differences shown in Table 10 are so large that two groups can be identified. In the first group, the results of the vision, sanction and evaluation systems as well as of the grouping system refer

to between 16 to 23 references to empirical sources in each subsystem. In the second group, the results of the communication and norm system each refer to 44 - 45 references to empirical sources. This means that the results of the communication and norm system refer to a more rich empirical material. However, this skewing should be related to the theoretical model of a learning organisation, where most of the concepts can be referred to these two subsystems. Consequently, the skew in the empirical richness of the subsystems is given by the theoretical model.

Table 10. Frequencies of the use of empirical sources in each subsystem as well as totally. V= vision system, G= Grouping system, C= Communication system, N= Norm system, S= sanction system, E= evaluation system.

	V	G	C	N	S	E	Total
Empirical Source							
Documents	6	0	16	12	3	9	46
Interviews	7	18	22	24	10	8	89
Survey	3	2	7	8	4	6	30
Total	16	20	45	44	17	23	165

The table furthermore show there is a discrepancy regarding which empirical sources results refer to, where interviews were referred to 89 times compared with document analysis referred to 46 times and the survey 30 times. This indicates that most results refer to the interview analysis. However, this may be a misleading image of the reliance of empirical sources in the results. A further analysis reveals that in four of six subsystems, the results that are related to the main concepts in theory rely on two or three empirical sources between 75%-100% (evaluation and norm system 100%, communication system 88% and sanction system 75%). The vision system had a balanced distribution regarding the reliance of empirical sources, where 50% rely on two or three empirical sources and 50% on one, while 25% of the results of the grouping system rely on two empirical sources and 75% on one. Putting these results together, it turns out that 70% of the results that are concluded in relation to the characteristics of the theoretical model rely on two or three empirical sources.

The use of method triangulation has made it possible to broaden the sources where such organisational characteristics can be found on the one hand, and to validate some of the results on the other hand. Even though there is a skew between the subsystems, particularly the grouping system that relies mostly on the interview analysis, it should be noted that the conclusions of the subsystems are not based on a single empirical source and/or on single respondents. Instead, conclusions are drawn on the basis of all available data. Conclusions that are drawn and generalised to the entire organisation are based on the sum of all results in each subsystem, as well as on the sum of all results in the subsystems put together. In the end, the generalised image of the organisation relies on the respondent's understanding and judgement.

The system theory analyses rely on different kind of data; the results of the factor analysis, the results of the subsystems and a re-analysis of data in the subsystems. Each analysis has been described in order to allow the reader to follow the analysis, interpretations and conclusions made. The reasons why three system theoretic analyses were performed, based on different kinds of data, have been to investigate if the results of each system theoretic analysis pointed in the same direction, or if there were any significant differences. By this means, actions have been taken to reassure issues of validity as well as the reliability of the study.

Ethical Considerations

The case has been explicit in the study, for several of reasons. Since it is important to describe the case, to put it in a context and to write its organisational saga in order to understand the case, some information would be so specific that it would be possible to identify the organisation even though the case were not revealed. For instance, Karlstad University College was one of three University Colleges that were transformed into a University 1999, and Karlstad University was the only one that has been a university annex to Gothenburg University. Leaving such information out of the study would have negatively influenced the readers understanding of the organisation's historical context and its strivings - and even though if the name of the university were left out in the text, it would have been easy to identify the university on the basis of such information. In addition, my organisational affiliation is explicit, which might have led people to guess the identity of the university.

A public university is public. As it is financed by tax-money, having aims that are prescribed by the government and an obligation to evaluate its efforts/performances in an open way, there do not seem to be any ethical hindrance towards the study of a public university. An important reason to choose Karlstad University as a case was that the management body gave me access to the organisation, and encouraged the study. I have also seen it as an advantage to be able to study the organisation from within rather than from the outside. The choice of Karlstad University as an object of study was also made as the organisation had an explicit vision to function as a learning organisation. Consequently, there are several of reasons why the case has been explicit.

To study an organisation where you are a member of the working force may be helpful as you have good knowledge of the organisation, its processes and the staff. There are also some risks that you have to consider when you choose to study an organisation as an insider. For instance, respondents that you are acquainted with might refer to well-known critical incidents and I as an interviewer might act in too relaxed a manner and not interrogate enough compared to when you not share a preunderstanding of what is said.

During the interviews the respondents' made statements about the management body. By referring to the management body, to which five individuals belong, in the text these individuals are sometimes in focus. The group is easily identified for people that know the University of Karlstad. Sometimes respondents have pointed out a single individual in the management body. However, as a rule I have chosen to treat what has been said about the management body and its members as information given about the management function. I thereby have avoided referring to single members of the management body that might have appeared in the interviews.

In the interviews respondents sometimes discuss information that is given in confidence. As the information provided in the interviews was valued as important I usually have not referred to exactly who gave it. In most cases I have left out which position different respondents had at the time the interviews were made to protect the integrity of the respondents. Note that gender, positions and organisational affiliation never are mentioned together. In order to avoid the identification of interview respondents when quoting them in the results, other information that may reveal their identity has been removed and revealing

words have been replaced with “X”. Examples of such revealing information are gender, departmental or disciplinary affiliation, names of colleagues, or names of educational programmes the respondent works with. The possibilities to identify interview respondents have been tested as I had some colleagues read some of the quotations used in the text and I asked them to try to identify who the respondents were. It turned out that no one succeeded to make such identifications from the text.

An event emerged during the interviews when one of the respondents was emotionally moved and started to cry. Some questions in the interview guide referred to a specific event in the respondent’s job situation that was stressful. In this case, the audio-tape was stopped and we talked through the situation and the feelings that had emerged. I thought the interview was over but after a while the respondent wished to continue and we did so. I have had ethical considerations about whether to include this interview in the study in the context of the respondent’s personal situation. However, the interview contained many interesting aspects with relevance for the study and since the respondent wanted to be a part of the study and wanted to continue the interview, I have chosen to include it. However, parts of the interview, which could have been sensitive for the respondent, have been excluded.

Chapter 3

Results

The results are presented as follows. First, the results of the factor analysis are presented. Second, the results of the qualitative as well as descriptive quantitative empirical data are presented for each subsystem. These are related to the characteristics of the theoretical model of a learning organisation and the requirements that the theoretical model places on the university. Thirdly, the results of the system theory analyses are presented, which aim to describing how the university's subsystems and organisational characteristics interact, and how they influence the university's capacity to function as a learning organisation.

Results of the Factor Analysis

A first analysis resulted in the identification of two components that together explained 46% of the variance. However, since one index, the sanction system, referred to both components, a new factor analysis was performed. The new factor scores were then correlated with the items in the sanction system, and it turned out that two of thirteen items correlated with the second component, while one item correlated with both. Accordingly, these three items were excluded and a new factor analysis was conducted.

As in the first analysis, two components were identified, where the first one explains 26 % of the variance and the second 21 %. Together the two components explain 47 % of the variance (see Table 11).

Table 11. Result of the Factor Analysis. Total, % of variance and cumulative % of initial eigenvalues.

Component	Total	% of Variance	Cumulative %
1	2.31	25.72	25.72
2	1.92	21.29	47.01
3	.97	10.80	57.81
4	.89	9.86	67.68
5	.80	8.88	76.56
6	.68	7.55	84.10
7	.58	6.42	90.53
8	.45	4.97	95.50
9	.40	4.50	100

Extraction Method: Principal Component Analysis.

The indexes in each component have been analysed. Table 12 shows that the factor loadings in the components were quite high and only required a response population of 50-150 in order to be statistically significant. As the response frequency was higher, between 190 and 217, the results of the factor analysis can be considered as reliable.

Table 12. Factor analysis; Rotated Component Matrix (rotation converged in three iterations).

Index	Component No 1	Component No 2
	<i>Ethos</i>	<i>Accountability</i>
1 - Norm - Absorbing new ideas	.58	
2 - Norm - Knowledge transfer		.51
3 - Norm - Experimenting & Mistakes	.66	
4 - Norm - Conflicts		-.58
5 - Sanctions	.68	
6 - Vision		.76
7 - Evaluation		.71
8 - Communication	.68	
9 - Groupings	.64	
Variance explained (%):	26	21

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

The first component included two indexes from the norm system, measuring the absorbing of new ideas, experimenting and mistakes as well as indexes measuring sanction, communication and groupings respectively, which had

positive factor loadings that varied between .58 and .68. The second component included two indexes from the norm system, measuring knowledge transfer and conflicts respectively and the indexes measuring vision and evaluation. While the indexes measuring knowledge transfer, vision and evaluation had positive factor loadings that varied between .51 and .76, the index measuring conflicts had a negative factor loading; -.58. The norm system is divided into four indexes, measuring several different concepts in the theoretical model and two of the indexes turned out as being referred to the first component and two to the second. This indicates that the measure of the norm system has captured two different dimensions.

The Qualities of the Components

The question now arises as to what distinguishes the two components identified in the factor analysis. The analysis of the contents of the items in the indexes included in the first component reveals that they contain aspects related to the organisational atmosphere. For example, the included items and indexes relate to organisational members' fundamental assumptions about what kind of behaviours are allowed and assumptions about how these behaviours are related to rewards and penalties, or rather lack of rewards and penalties. They also relate to the quality of communication between different organisational levels, how individuals shape informal, inter-personal relationships, i. e. communication and grouping patterns within the organisation. As a result, the first component is labelled *ethos*.

The second component refers to other qualities within the university, since the contents of the items and indexes in the component have in common that they cover how organisational members' understand how the university functions regarding vision, i. e. the formulation process of the vision, evaluation or problem-solving processes, i. e. structures for systematic data gathering, data processing and data evaluation, and if there are structures for knowledge transfer, and dealing with conflicts when they appear. The analysis of the contents revealed that these aspects could be referred to feedback processes and monitoring aspects of the university at an overall organisational level. Consequently, the second component is labelled as *accountability*.

The results of the relationships between the index measuring sanctions and the ethos component were surprising, since there was an assumption in place that

sanctions would measure monitoring aspects of the organisation. However, as Ekholm (1988; 1989) has made clear, the sanction system has the power to bring concrete meaning to existing organisational norms and values. As the norm as well as the sanction system have turned out to be vague and unclear to survey respondents (see also the results of the norm and sanction systems later in the study), this indicates there is a lack of clear structure in the sanction system, which may explain why the index measuring sanctions turned out to be related to ethos rather than to accountability.

In addition, two of four indexes measuring the norm system were related to the first component - ethos, while the other two indexes related to the second component - accountability. This means the norm system can be referred to both dimensions. The results of such measurement might be explained by the blurring of the line between the concepts of culture and structure, i.e. their dialectic relationship as mentioned in the theoretical framework, and the difficulty to distinguish the concepts during the construction of the measurement.

Result Summary & Conclusions

The factor analysis resulted in the identification of two components that together explain 47 % of the variance of the total structure. A further analysis revealed the first component measured ethos while the second component measured accountability.

Results of Empirical Data in each Subsystem

The Vision System

The theoretical model of a learning organisation used in this study is characterised by vision that are formulated by organisational members, i. e. in a bottom-up process and are the sum of personal visions and the common meaning constructions within the organisation. Organisation members therefore have knowledge about the contents, can identify themselves and relate their work to them. As a consequence of the bottom-up formulation process, organisational members take personal responsibility for working to achieve the vision. Accordingly, the vision pervades the entire organisation and gives organisational members a sense of moving in the same direction. In other words, the vision is an integrative force within a learning organisation.

The Content of the Vision

Data analysis, based on document analysis¹⁴ only, resulted in the identification of three organisational characteristics that describe if and how the university matches the characteristics of the theoretical model: *the open university*, *the multidisciplinary university*, and, *a learning university*.

The first organisational characteristic, *the open university*, means that in the vision Karlstad University is characterised by openness, honesty and absorbance of ideas, internally as well as externally. At the same time, Karlstad University is striving to keep its integrity and autonomy in relation to society. The relationship between organisational members and students are characterised by close co-operation and together they are creating new knowledge. The relationships between organisation members is characterised by open communication where the opinions of the staff members are of great value for the university. Organisation members co-operate over disciplinary boundaries and learn from one another. Since a learning organisation is characterised by openness in communication where individuals share and extend mental models, crossing organisational boundaries, this organisational quality matches the characteristics of the theoretical model.

¹⁴ Karlstad University's Vision, 2001.

The second organisational characteristic, *the multidisciplinary university*, means that in the vision Karlstad University is characterised by strong scientific disciplines. Organisational members work across disciplinary boundaries, in teaching as well in research, which supports effective problem-solving and opens new pathways for knowledge creation. These qualities match the characteristics of a learning organisation.

The third organisational characteristic, *a learning university*, suggests that in the vision Karlstad University is well known for its research on learning. The university applies research results to its own activities, processes and organisation. In order to make this possible, social networks and arenas for meeting places where staff can communicate with one another characterise the internal organisational environment. Organisation members view learning as a natural part of their daily work, learn from their experiences and continually develop their own learning. In order to support this, the university has effective routines to measure quality, according to the vision document. Note that the contents include a learning culture where organisational members view learning as a natural part of daily work, the continual development of learning and also the application of learning results within the organisation are underlined. In addition, the focus is on the creation of meeting arenas where individuals can meet and learn from one another. Consequently, the contents of the third organisational characteristics meet the requirements of the theoretical model.

The Formulation Process

Data analysis resulted in the identification of two organisational characteristics that describe the formulation process of the vision: *democratic and dialogue-based formulation process* and *one-sided, i. e. top-down formulation process*.

The first organisational characteristic, *democratic and dialogue-based formulation process*, was identified in the document analysis¹⁵ where the Rector claims the vision was formulated as the result of a two year long process of dialogue involving different parts of the organisation and its members in the process. The quotation from the document below illustrates this.

¹⁵ Karlstad University's Vision Document, 2001.

D¹⁶ The document you have in your hand has emerged through a dialogue with all departments and organisational units within Karlstad University and has been decided by the university's board. This process has taken two years.
(Karlstad University's Vision Document, 2001, pp. 1.)

A democratic and dialogue-based formulation process is in accordance with the theoretical model and therefore, this organisational characteristic meets the requirements of a learning organisation.

The second organisational characteristic, *one-sided, i. e. top-down formulation process*, was identified in the interview analysis and refers to the understanding that the formulation of the vision was formulated by the management body alone. The citation below gives an example of this.

R11 ...the real work with the vision was very one-sided. It was done by the management, and I don't think it was something that was worked through within the university...

A one-sided, i. e. top-down, formulation process is opposite to the characteristics of the theoretical model where vision are formulated in a bottom-up, dialogue-based process and consequently, this characteristic does not match those in the theoretical model.

So far, the formulation process of the vision has been described in two different ways. However, the results of the survey analysis increase the confusing impression of the formulation process since survey respondents were not particularly clear in their response patterns. For example, most respondents, 59 %, disagree that the vision was formulated by a dialogue-based process while 87 % of the respondents disagree that they participated in the formulation process. Yet 5 % had been active although surprisingly 8 % do not know if they were active or not. Still, and this contributes to the confusing image of the formulation process, 65 % of the respondents agree that the vision was formulated by organisational members. In addition, it turned out that respondent's response patterns varied on the question of whether the management body formulated the vision by themselves: 34 % of the respondents agree, 30 % disagree and 36 % do not know. The interpretation of such confusing data should be carried out carefully and therefore, the conclusion is that there are two different descriptions of the formulation process of the vision, one dialogue-based formulation process that meets the characteristics in the theoretical model of a learn-

¹⁶ In the following I use "D" for documents, and "R" plus number to represent a respondent from the interviews.

ing organisation and one top-down formulation process that does not meet the requirements.

Implementation Process

Document analysis¹⁷ resulted in the identification of the intended implementation process. According to management intentions, each department and units were supposed to break down the future shape of vision and goals, make the contents concrete and formulate strategies as to how to realize the vision. However, data analysis based on interview analysis only, resulted in the identification of three organisational characteristics that describe if and how the university matches the characteristics of the theoretical model: *parallel processes*, *lack of communication* and *divergence of implementation strategies*.

The first organisational characteristic, *parallel processes*, refers to respondents' understanding that the implementation process was interfered with by other processes that were understood to be similar, which created confusion, a sense of meaningless and a resistance to participation. Specific interview respondents have identified the SWOT-analysis¹⁸ and SIQ-examination, which later resulted in Annual Report 2001, as being parallel processes to the strategy work. Furthermore, these processes have sometimes even been understood as being in contradiction with one another. The quotation below illustrates the presence of parallel processes, and parts of the interpretations above.

R11 ...we had discussions about this SWOT-analysis, which we were supposed to do last year. (later)... so many individuals were involved in this, many individuals from many different units that haven't been in contact with one another (later)... we tried to adjust the SWOT-analysis in relation to the vision, to integrate it... (later)... but these documents have a tendency to end up on the bookshelf...

Consequently respondents understood that the implementation process suffered interference from parallel processes which has resulted in a resistance to participate in the implementation. Since a learning organisation is characterised by a common vision that is formulated by organisational members, which includes implementation processes that permeate the entire organisation, this organisational characteristic does not match such requirements.

¹⁷ Karlstad University's Vision Document, 2001.

¹⁸ An analysis of the organisation's strengths, weaknesses, opportunities and threats, made at all organisational levels.

The second organisational characteristic, *lack of communication*, refers to respondents understanding that they have lacked dialogue with the management body about the vision during the implementation process in order to make sure they have a common understanding of its contents. The quotation below gives an example of this.

R1 ...we're suffering from the problem the management and staff never talk the same language, and don't have a common understanding about it... (later)... there's a need to know how the management thinks about vision and strategies, because I have an understanding of what it is and what it expresses, but in order to really understand, I need much more communication with the management on daily issues...

The lack of communication is also related to the perception that no one has been responsible for the implementation process and that no one has followed up the strategy work. The following quotation illustrates this.

R14 ...sometimes they're making decisions at a high organisational level and then they assume the decisions are implemented. There's a need to make individuals responsible for the implementation process.

Accordingly, there are tendencies showing that respondents understand there has been a lack of communication during the vision's implementation process which has influenced organisational members' ability to take personal responsibility for working towards the vision negatively. A learning organisation is characterised by a strong common vision with which all organisational members can identify, however this requires communication. Consequently, this organisational characteristic does not meet the requirements of the theoretical model.

The third organisational characteristic, *divergence of implementation strategies*, refers to the identification of three different implementation strategies in the interview analysis: *one person's work strategy*, *organised and unsystematic strategy* and *systematic and integrative strategy*.

The first strategy, *one person's work strategy*, refers to how organisational members in a department were not motivated and refused to participate in the implementation work, according to the interview respondent below. Therefore, the Head of the Department formulated the strategy document by himself and consequently, the vision was not implemented and worked through at departmental level. The following quotation gives an example of this.

R14 ... a decision was made that everyone should make a strategy document on departmental level, but we didn't... (later)... the staff wasn't motivated... (later)... the Head of the Department formulated the document, so it was never implemented...

A learning organisation is characterised by the vision as an integrative force that involves organisational members and this strategy contrasts starkly with this requirement.

The second strategy, *organised and unsystematic strategy*, refers to how a department set aside time and organised for the implementation work by arranging a kick-off. Organisational members were divided into groups to discuss and make the contents of the vision concrete, which an interview respondent affirmed. However, organisational members could not relate to the vision, the interview respondent continues, since they could not understand the meaning of this work. They consequently refused to seriously discuss such concretization. The following quotation illustrates this.

R9 ...we were on a kick-off with the department, one or two days and we were supposed to sit in groups... (later)... and discuss this, how we relate to this and nothing happened. Everybody just said "let's have some fun instead"... (later)... there was complete consensus that this was rubbish. Why should we sit here and relate to this? It's just bla, bla, bla. Among teachers, they just felt - forget it! There was no respect for this work at all. "We don't want to relate to this, we don't even know where the vision comes from"...

Since a learning organisation is characterised by a general gathering around the vision, where organisational members make themselves personally responsible for working with it, this strategy does not match such requirements.

The third strategy, *systematic and integrative strategy*, refers to how another organisational unit organised the realizing of the vision systematically and continuously involving all the staff in dialogue in order to achieve a common understanding. According to the interview respondent, this resulted in a strong sense of moving in the same direction and strengthened the group's sense of well-being. The quotation below gives an example of this.

R12 We've been working with this a lot at the department. We had a special group for this, partly to consider the university's overall vision and to integrate it with the departments vision... (later) ... which was presented for colleagues, who also have worked this through. So, everyone has been participated, and that's important.

Since this strategy has involved organisational members in the implementation process in a systematic and integrative way where the implementation has pervaded the daily work, it meets the requirements of the theoretical model. As noted, two strategies do not meet the requirements of the theoretical model and one strategy does. However, as there are divergences in the implementation strategies where one meets the requirements, the organisational characteristic is concluded to meet as well as not to meet the requirements of a learning organisation.

Knowledge and Identification

Data analysis resulted in the identification of three organisational characteristics that describe if and how the university meets or does not meet the requirements of a learning organisation: *no knowledge and no identification*, *knowledge and no identification* and *knowledge and identification*.

The first organisational characteristic, *no knowledge and no identification*, relies on the results from the interview and document analysis¹⁹ and refers to respondents who have no knowledge about and cannot identify themselves with the vision. According to the interview analysis, one reason for this seems to be that these respondents cannot relate their tasks to the contents of the vision since the content of the vision mainly cover research and education, and respondents drawn from secretaries and technicians have difficulty relating to these fields. The quotation below gives an example of this.

- | | |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I | Do you have knowledge about Karlstad University's vision? |
| R15 | Well, to be honest, I know there is such a document and I know we were supposed to discussion the vision on our own organisational level, which we have done, but somehow I haven't been able to internalize it in such a way that I can repeat the contents. |
| I | Do you identify yourself with the vision? |
| R15 | Well, I think that is the main problem, that I can't do that. The contents are so much about education and research, you know... Internationalization and everything and as a secretary you're never a part of it... (later)... and it's so difficult to relate this to my own world, to my own unit, or my own little working world. |

¹⁹ The Secretary and Technicians Barometer, 2001.

Later on in the interview the respondent talks about being invisible since secretaries' work is difficult to relate to the content of the vision, which gives a sense of exclusion. This shows a tendency for the content of the vision not to include all organisational members. Consequently, the content does not pervade the whole organisation.

However, it turned out that it is not only secretaries and technicians that have little knowledge of the vision and have difficulties identifying with it. This understanding is also represented by other professions such as teachers and professors who are more naturally related to the contents of the vision. The following quotation illustrates this.

- | | |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I | Do you have knowledge about Karlstad University's vision? |
| R13 | Well, I have read the vision, but I think its too generally formulated and gives no guidance on how to relate it to the daily work. |
| I | You can't relate the contents to your own work? |
| R13 | No, I can't say exactly what's in there, but I can guess pretty much it's about equality, women's issues, minority... and the university should have a good working environment, and be at the forefront of internationalization... I guess I can repeat that much about it, without reading the stuff. I don't remember the vision, but I have it on a bookshelf. |

The vision's general formulation was tested in the survey. However, as the responses were so divergent, no clear pattern has been identified. Such a result might indicate that respondents are uncertain about the contents of the vision, but such an interpretation should be made with care. In summary, there are tendencies showing that there are respondents who have no knowledge of and no identification with the university's vision, which does not match the characteristics of a learning organisation.

The second organisational characteristic, *knowledge and no identification*, is based on the results of the interview and survey analysis and refers to those who have knowledge about the contents of the vision, but for some reason cannot identify themselves with it. The reasons seem varied. One reason identified in the interview analysis is that respondents cannot relate their work to the vision. Results from the survey analysis support this result since 67 % of the respondents estimated they cannot relate their work to the vision. Another reason, also identified in the interview analysis, is that respondents do not share the values in the vision. The results of the survey analysis tend to support this since 43 % of the respondents disagree they share the values in the vision, 29 % es-

imate they share the values and 28 % could not judge whether they share the values or not. Once again, the uncertainty about whether respondents share or do not share the values might be linked to an uncertainty about the contents of the vision, but that interpretation should be made cautiously.

The third reason for the weak identification with the vision seems somehow to be related to the general formulation of the vision. In the interview analysis a concern was identified regarding the difficulty of identifying with the vision, as the vision was perceived as formulated in order to have something to show to externals, to the environment, rather than something that has a concrete meaning for, and pervades, the entire organisation. The quotation below illustrates this.

R2 ...well, they're supposed to be general, they're supposed to be there, otherwise we wouldn't be a university with a good reputation. So, they should be general, and they are, but they don't seem to be important to the organisational members anyway. The vision have to be acted upon, so they really mean something. Until then, the vision have no concrete meaning.

Results of the interview analysis also reveal that respondents have difficulty identifying with the vision because of the use of the concepts in it. The concepts of the open university, the multidisciplinary university were understood as broad and “trendy” concepts in higher education, and the use of such fashionable concepts seem to reduce their real meaning for some interview respondents. Note that this aspect was not tested in the survey.

A fifth and final reason for the difficulty in identifying with the vision is related to respondent's poor faith in the university's ability to realize the vision. The quotation below, from an interview, gives an example of this.

R4 ...I can't see this university is working in that direction at all...

The results of the survey analysis show that most respondents, 52 %, do not have any faith in the university's vision. Summarizing, there are tendencies showing that there are respondents who have knowledge about the contents of the vision but still cannot identify themselves and their work with it. This consequently contrasts with the requirements of the theoretical model.

The third organisational characteristic, *knowledge and identification*, was identified in the interview analysis by some interview respondents who had knowledge of

and could identify themselves with the vision. They also seemed to have faith in the university's ability to realize it. The following quotation gives an example of this.

- I Can you identify yourself with the vision?
- R9 ...openness, multidisciplinary and learning, yes...
- I Is it in accordance...
- R9 ...with my thoughts about it? Yes.

Consequently, there are respondents who have knowledge and can identify themselves and their work with the vision, which matches the characteristics of a learning organisation.

Result Summary & Conclusions

Data analysis resulted in the identification of eleven organisational characteristics that describe if and how the university matches the requirements of the theoretical model of a learning organisation. Of the eleven organisational characteristics, five of them turned out to meet the requirements of the theoretical model, five did not and one met, as well as did not meet, the requirements of the theoretical model. With respect to the balanced distribution of organisational characteristics that match, as well as do not match, the requirements of the theoretical model, the vision system as a whole is concluded to meet, as well as not to meet, the characteristics of a learning organisation.

Table 13 show results, their reliance on empirical sources and conclusions. Identified organisational qualities are summed up and it is concluded whether they match the characteristics in the theoretical model or not. (+) means the organisational qualities meet the characteristics in the theoretical model, (-) means they do not and, (+, -) means they meet, as well as do not meet, the requirements.

Table 13. Results and conclusions: the Vision System

Characteristics of the Theoretical Model	Empirical source	Conclusion (+, -)
Contents of the Vision	Document	+
The Formulation Process of the Vision	Document Interview Survey	+, -
Implementation Process	Interview	-
Knowledge about & Identification with the Vision	Document Interview Survey	-

The Grouping System

In all organisations, social groupings emerge because people need to feel a sense of belonging with others. Social groupings are also of importance in order to enable cooperation and mutual learning - in other words, to enable the creation and transfer of knowledge. In this study, a learning organisation is characterised by organisational members' multi-membership of different groupings that transcend professions as well as organisational boundaries. This means, knowledge is created and transferred within as well as between groupings. The presence and the characteristics of groupings therefore represent important conditions for the creation of knowledge and knowledge transfer within the university.

It is important to point out that the same individuals can belong to several groupings at the same time, an aspect that itself might influence the subsystem's ability to meet the requirements of the theoretical model positively. The focus is on the characteristics of the identified groupings and whether they meet or do not meet the requirements regarding knowledge transfer, within and between groupings, of the theoretical model. Note that the results do not provide any information about whether learning within and between groupings actually occurs, since this has not been covered within the study.

Professional Grouping

Data analysis resulted in the identification of professional grouping and of two characteristics that describe if and how the grouping matches the requirements of the theoretical model: *gathering around professions, excluding other professions* and *transcending organisational boundaries*.

The first characteristic, *gathering around professions, excluding other professions*, relies on the results of the interviews and survey analysis which reveal there is a strong identification among professions. For example, respondents seemed to prefer to socialize with others that belong to the same profession during coffee breaks, in informal conversations and in cooperation during the daily work. This means, secretaries socialize with secretaries, teachers with teachers and so on. The following quotation gives an example of this.

R6

We're really a tight group of secretaries on the department...(later)... We've created small networks, with a person who spreads the information around (within the grouping within the university, my notation).

The results of the survey analysis revealed a pattern that supports these results. Respondents' professions were cross tabulated with their estimation of how often they cooperate with different professions, and it turned out they mostly cooperate within their own profession rather than with others.

The strong identification with the profession is understandable since it is a part of the socialization process and the creation of a professional identity. The tighter socialization and cooperation within the profession might also be natural because of the similar character of working tasks. The gathering of professions indicates good conditions for transferring knowledge and for mutual learning within the grouping and consequently, this supports the university's ability to transfer knowledge internally. However, the strong identification around professions also means a tendency to exclude other professions and as a result, this hinders knowledge transfer between the professional groupings. In other words, it works against the university's ability to transfer knowledge internally. Since a learning organisation is characterised by cooperation and knowledge transfer within, as well as between groupings, this groupings' characteristic has been concluded to meet as well as not to meet the requirements of the theoretical model.

The second characteristic, *transcending organisational boundaries*, relies on the results of the interview analysis only and refers again to the identification with professions but in a different way. Different professional categories are represented in all departments and the profession knits them together. An example of this is given in the previous quotation where the respondent gives an example of how people with the same profession meet in small networks that cross organisational boundaries. This indicates that professional identity transcends organisational boundaries, creating good conditions for cooperation and knowledge transfer within the grouping, which matches the characteristics of a learning organisation.

Functional Grouping

Data analysis resulted in the identification of functional grouping which is defined by gathering round a task or a project. Two characteristics were identified that describe if and how the grouping matches the characteristics of the theoretical model: *the inclusion of different professions* and *transcending organisational boundaries*.

The first characteristic, *the inclusion of different professions*, relates to the results of the interview analysis and refers to the definition of the grouping, the gathering round a task or a project. In other words, it is the task or project around which the grouping is gathered that is the focus and thereby, it is the project or task that shapes the grouping. This means that every profession that is required to make the project succeed is included in the grouping. For example, a project might include researchers, teachers, a secretary and representatives from the administration and so on. The following quotation gives an example of this.

R7 ...use the human resources and each profession works with what they're professional at, and gives them responsibility and authority...

The inclusion of different professions creates good conditions for cooperation and knowledge transfer between the professions within the university and consequently, this characteristic meets the requirements of the theoretical model.

The second characteristic, *transcending organisational boundaries*, relies on the results of the interview analysis only and refers again to the definition of the grouping - the gathering round a task or a project. This means, the grouping is not necessarily shaped around a discipline or a department. For example, organisational members from different professions, disciplines and departments are sometimes included in the same project, which means organisational boundaries are transcended. The quotation below gives an example of this.

R3 ... one of these working groups included several departments and many different disciplines...

By transcending organisational boundaries, function grouping creates good conditions for cooperating and transferring knowledge between disciplines and departments. To conclude, this characteristic matches those of a learning organisation.

Disciplinary Grouping

Data analysis resulted in the identification of disciplinary grouping, and of two characteristics that describe if and how the grouping matches the requirements of the theoretical model: *inclusion of different professions* and *self-asserting tendencies*.

The first characteristic, *inclusion of different professions*, relies on the results of the interview analysis only and refers to the inclusion of professions that are shaped around disciplines. After all, disciplines do not only include teachers and researchers, they also include secretaries, Ph. D. students and others. The following quotation gives an example of this.

R13 ... in my group, I would like to have a doctor, we don't have one now. We have a professor and Ph. D. students and partly a secretary and a technician...

The inclusion of different professions creates good conditions for cooperating and transferring knowledge within the discipline, which transcends professions. Consequently, this characteristic meets the requirements of the theoretical model.

The second characteristic, *self-asserting tendencies*, relies on the results of the interview analysis only and refers to another aspect in disciplinary grouping. It turned out that disciplines in the same departments sometimes have a competitive relationship with one another, regarding funding, work tasks and students which results in self-asserting tendencies, according to respondents. The self-asserting tendencies strengthen the “we-feeling”, i. e. the identification with the discipline, which also increases a “we and them-thinking” in relation to others. Examples of self-asserting tendencies and competition are given in the quotation below.

R10 There's a tendency to make sure your own discipline gets advantages in relation to other disciplines...

R9 It has become a competitive situation towards other disciplines, where there actually have been pre-requisites for cooperation.

Self-asserting tendencies mean inclusion as well as exclusion, inclusion of different professions and exclusion of disciplines that might be seen as competi-

tors. Note that the presence of self-asserting tendencies can be assumed to vary between disciplinary groupings. However, self-asserting tendencies hinder co-operation and knowledge creation and knowledge transfer between disciplinary groupings and do not match the characteristics of a learning organisation.

Transcending Disciplinary Grouping

Data analysis resulted in the identification of transcending disciplinary grouping and of two characteristics that describe if and how the grouping matches the requirements of the theoretical model: *weak links to their department* and *transcending organisational boundaries*.

The first characteristic, *weak links to their department*, relies on the results of the interview analysis only and refers to the discipline's physical as well as mental distance from its department which tends to influence the disciplines organisational identification negatively. According to the respondent below, the discipline's cooperation with their department is weaker than with others and thereby, it can be assumed that knowledge transfer between the discipline and the department is weak as well. The following quotation gives an example of this.

R14 ...in our case it's weird, because we're X disciplines spread out in X different buildings... (later)... I think we (the respondents discipline, my notation) cooperate more with disciplines in other departments than with our own department...

Since this characteristic influences cooperation and knowledge transfer within their department negatively, and a learning organisation is characterised by co-operation and knowledge transfer within as well as between all organisational levels, this characteristic does not meet the requirements.

The second characteristic, *transcending organisational boundaries*, relies on the results of the interview analysis only and relates to the previous quotation and refers to the closer identification and cooperation with disciplines in other departments. This means, the discipline over-bridges organisational boundaries which influences its ability to transfer knowledge to other parts of the organisation positively. Consequently, this characteristic matches those of a learning organisation.

Departmental Grouping

Data analysis resulted in the identification of departmental grouping and of four characteristics that describe if and how the grouping matches the characteristics of a learning organisation: *inclusion of several disciplines*, *inclusion of several professions*, *natural meeting arena* and *self-asserting tendencies*.

The first characteristic, *inclusion of several disciplines*, relies on the results of the interview analysis and refers to the diversity of disciplines that are organised within the same departments. In the case of reorganisation, new disciplines can be added while others are removed, which means there are sometimes changes in the mix of disciplines. The quotation below gives an example of this.

R1 ...we lost a discipline and we gained another and that was all...

The mix of disciplines that are organised together provides conditions to cooperate and transfer knowledge that cross disciplinary boundaries within departments. In other words, the inclusion of several disciplines supports cooperation and knowledge transfer and matches the requirements of a learning organisation.

The second organisational characteristic, *inclusion of several professions*, relies on the results of the interview as well as survey analysis and refers to the diversity of the professions that are included within departments. The quotation below gives an example of this.

R2 ... two teachers and Rector of Studies... (later) ... we have an extraordinary secretary...

The results of the survey show that secretaries, teachers, PhD students and researchers have the most contact on a daily basis of all identified professions and groupings. The mix of professions provides good conditions to cooperate and transfer knowledge between as well as within professions, which is in accordance with the characteristics of a learning organisation.

The third characteristic, *natural meeting arenas*, refers to the existence of places where organisational members in departments meet naturally on a daily basis. The results of the interview analysis show that coffee rooms and corridors may give rise to knowledge transfer. The following quotation illustrates this.

R3 ...the coffee room is the best place. There, you get information, discuss and question... (later)... there you can create something new...

As the quotation indicates, coffee rooms are natural meeting arenas for organisational members at the departmental level, where colleagues who do not normally work together start dialogues and transfer knowledge. Consequently, the natural meeting arenas at a departmental level support knowledge transfer and therefore this characteristic matches the requirements of the theoretical model.

The fourth characteristic, *self-asserting tendencies*, refers to departments' integrative force; forces that work to integrate a number of disciplines into one entity. The sense of belonging to departments provides organisational members as well as disciplines with an organisational identity. However, the results of the interview analysis reveal that such a sense of belonging contributes to an us-and-them way of thinking in relation to other departments, and a view of departments as more or less independent organisations within the university. The quotation below gives an example of this.

R6 ...a department is like a single business company...

Accordingly, there is a tendency among respondents to view departments as loosely coupled organisational entities in relation to the entire organisation, where their focus is on running their own business with sub-optimizing tendencies. Such self-asserting behaviours contribute to fragmenting the organisation and work against knowledge transfer. Consequently, this characteristic does not meet those of a learning organisation.

Power Grouping

Data analysis resulted in the identification of power grouping and of three characteristics that describe if and how the grouping matches the requirements of the theoretical model: *inclusion and exclusion*, *membership in several power groupings*, and *self-asserting tendencies*. Note that the results rely on the interview analysis only.

The first characteristic, *inclusion and exclusion*, refers to how members join power groupings. In order to become a member of power groupings, according to

interview respondents, you already have to “be” someone i. e. individuals have to be powerful already in order to become more powerful. On the one hand, individuals can be chosen by election to these groupings. On the other hand, they can be selected or handpicked by someone in the grouping. The means of the inclusion results in a concentration of power within the organisation, according to interview respondents, which excludes a large group of organisational members’ potential to influence decision-making. The following quotation illustrates this.

R15 I’m afraid it becomes a mutual admiration club, that it becomes an elite among the staff, while others never have a chance to get their voices heard... (later) ... it’s like they are going along the highway... (later)... they get a reputation of being so competent, and it isn’t always the ones I regard as competent...

The process of inclusion and exclusion indicates there might be a tendency to invite organisational members who share mental models with the other members in power grouping, a feature that is contrary to the characteristics of a learning organisation.

However the quotation above underlines the tendency for the same individuals to appear repeatedly in power groupings which fall into the second characteristic, *membership in several power groupings*. As the same individuals are members of different power groupings, individual membership transcends groupings. This influences the capacity to transfer knowledge between groupings positively, and matches the requirements of the theoretical model.

The third characteristic, *self-asserting tendencies*, refers to the behaviours in power groupings. According to respondents, members in power groupings are prone to “watch one another’s backs” in order to protect their interest coalition. This means defending their interests and other members of the grouping; if members are questioned, their common interests are threatened. Defending members becomes natural behaviour as they are dependent on one another in order to reach their goals, according to interview respondents. The following quotation gives an example of this.

R3 You become very important when you get power and it’s all about watching one another’s backs.

I What is that? What are they doing when they watch one another’s backs?

R3 They’re always showing a united front, so it looks like they are agreeing. They aren’t allowed to criticise one another openly, so to speak.

By watching one another's backs, the grouping becomes self-assertive and less likely to cooperate and transfer knowledge with other groupings. This does not match the characteristics of a learning organisation.

Interest Grouping

Data analysis resulted in the identification of interest grouping and of two organisational characteristics that describe if and how the grouping matches the requirements of the theoretical model: *interest and curiosity* and *transcending organisational boundaries*. Note that the results rely on the interview analysis.

The first characteristic, *interest and curiosity*, refers to the reason why this grouping emerged originally. According to respondents, organisational members that have a common interest and curiosity gather in order to develop their knowledge in the field. The following quotation illustrates this.

R3 ... I contact someone else I know, to whom I can talk and discuss with...

The gathering on such a basis creates good conditions for knowledge transfer within the university and matches the requirements of the theoretical model.

The second organisational characteristic, *transcending organisational boundaries*, refers to gathering around common interests and means seeking out organisational members that share the same interest and curiosity in other organisational parts or levels if necessary. The quotation below indicates this.

R4 ..there are projects that really are multidisciplinary...

Sometimes, such common interests become permanent organisational units or networks. One interview respondent gave the example of a multidisciplinary organisational network that includes a number of disciplines from a number of departments. This indicates good conditions to transfer knowledge over organisational boundaries which match the characteristics of a learning organisation.

Personal Grouping

Data analysis resulted in the identification of personal grouping and its characteristics'. However, the characteristic's ability to match the requirements of the theoretical model has not been identified. Therefore, the characteristics of the grouping will be described and then left without conclusion. Note that the results rely on the interview analysis only.

Personal grouping is characterised by *gathering based on personal choices and on friendship* which goes beyond professions, power, disciplines and departments. It seems to be grounded on personal values and beliefs, with some socializing at work only, while others socialize even in their private life. The following quotation gives an indication of this.

R15 It's difficult to be friends with the boss at the same time as X is the boss.

I Why is that?

R15 ...I don't want to know things the boss needs to talk about, issues or problems in my unit...
(later)... but we meet like the old friends we are and talk about our children or anything...

Person grouping can be assumed to provide individuals with a social sense of belonging at work that leaves professional and power ambitions aside, and where individuals get relief from work stress and conflicts.

Result Summary & Conclusions

Data analysis resulted in the identification of eight groupings within the university in which eighteen characteristics were identified that describe if and how the groupings match the characteristics of a learning organisation. Of these eighteen characteristics, eleven of them turned out to meet the requirements of the theoretical model, five do not and one meets as well as does not meet the requirements. Note, one group's characteristic could not be concluded in relation to the theoretical model. With respect to the dominance of characteristics that meet the characteristics of a learning organisation, the grouping system as a whole is concluded to match the requirements of the theoretical model.

The results, their reliance on empirical sources and conclusions are displayed in Table 14. The qualities in the groupings are summed up and it is concluded whether they match the characteristics in the theoretical model or not. (+)

means that the characteristics of the groupings are concluded to meet the requirements of the theoretical model, (-) means they are concluded not meet the characteristics and, (+, -) means they are concluded to meet, as well as not to meet, the requirements of the theoretical model. (?) means it has not been possible to conclude the groupings' characteristics in relation to the theoretical model.

Table 14. Results and conclusions: The Systems of Groupings.

Identified Groupings	Empirical Source	Conclusion (+, -)
Professional Grouping	Interview Survey	+
Functional Grouping	Interview	+
Disciplinary Grouping	Interview	+, -
Transcending Disciplinary Grouping	Interview	+, -
Departmental Grouping	Interview Survey	+
Power Grouping	Interview	-
Interest Grouping	Interview	+
Personal Grouping	Interview	?

The Communication System

In this study, a learning organisation is characterised by a high degree of communication flow between different parts of the organisation, hierarchical as well as vertical, also by a specific quality of communication: dialogue. While dialogue is characterised by taking one another's perspectives and expanding mental boundaries, which results in learning, development and knowledge transfer, discussion is characterised by argumentation with the purpose of "winning" and monologue/one-way communication is more characterised by information. In other words, by dialogue individual learning becomes collective and new knowledge can be created and transferred. However, this requires meeting arenas where organisational members from different parts of the organisation can participate in dialogue.

Communication between the Management and Leaders

Here, leaders refer to Heads of Departments as well as leaders of other organisational units that participate in management meetings with the Heads of Departments and members of the management body of the university. Data analysis resulted in the identification of two organisational characteristics that describe if and how the university matches the requirements of the theoretical model of a learning organisation: *unclear quality of communication* and *poor communication flow*.

The first organisational characteristic, *unclear quality of communication*, was identified in the interview and survey analysis, however the results indicate different things. While the results of the interview analysis reveal the quality of communication between the management and leadership levels is characterised by one-way communication rather than discussion and dialogue, the results of the survey analysis show that respondents estimate that the quality of communication is mainly characterised by dialogue. For example, the results of the interview analysis show that respondents, representative of the limited number of respondents who communicate with the management body, define the quality of communication as monologue. The quotation below gives an example of this.

R14

Well, in these meetings, the management talks a lot, you can notice that. Most people are silent, because they've learned it's better to be silent.

The reason why the communication is characterised by monologue, according to the respondent above, is that the management uses meetings to inform leaders about ongoing processes and there is little time left for discussions or dialogue. Another reason is hesitance to speak out because of fear of losing face and one's reputation in front of colleagues and of the management body of the university.

The results of the survey analysis provide a different image of the quality of communication. It turns out that 43 % of the respondents estimated the communication as dialogue, 35 % as discussion, 17 % as monologue and 4 % as no communication at all. There is a discrepancy in how respondents in the interview and survey analysis define the quality of communication between the management body and leaderships level. The belief among many members of the organisation is that dialogues exist among the people that have leading positions. The information shows that another picture is realistic, given from interviews based on persons who often participates in these meetings. I therefore draw the conclusion that this organisational characteristic meets, as well as does not meet, the requirements of the theoretical model.

The second organisational characteristic, *poor communication flow*, relies on results of the document as well as interview analysis, which reveal the quantity of communication at this organisational level is poor. For example, the results of the document analysis²⁰ show that Heads of Departments, who are one part of the communication process at this organisational level, understand there is a lack of communication between them and the management body. An example of this is given in the quotation below.

D They understand the distribution of responsibility between management body, the roles of Rector, Vice Rector and Pro Rector are unclear, which results in an increased need for communication with the Rector, who is not available. (The Work Authority Report, 2001, pp. 2, group interview with Heads of Departments)

The results of the interview analysis show the same tendency, here represented by the limited number of respondents that communicate at this organisational level. These respondents understand there is a lack of communication with the management body and that there is a need to increase this. The following quotation gives an example of this.

²⁰ The Work Authority Report, 2001.

R1 I would like to have much more contact with the management, that we met more in the daily work, so to speak.

To summarize, there are tendencies showing that respondents perceive a poor flow of communication between management and leaders and this contrast with the characteristics of a learning organisation.

Communication between the Management Body, the Faculty and Departments

Data analysis resulted in the identification of three organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *diffuse and informal communication structures, the creation of parallel structures and unreliable information and delayed communication.*

The first organisational characteristic, *diffuse and informal communication structure*, relies on qualitative data, which reveals there is a discrepancy between the intended and actual distribution of authority and decision-making; which influences the communication processes at this organisational level. According to the results of the document analysis²¹, authority and decision-making at this organisational level are intended to be distributed as follows. The Board is the highest authority of decision-making, followed by the Rector and the management body. The next level in the hierarchy is the Faculty, which is supposed to make decisions on its own and prepare issues and suggest decisions for the management body and the Board. Departments are dependent on the decisions made at the previous organisational levels in order to make decisions of their own. This means, regarding communication between the management body, the Faculty and departments, that the management body and the Faculty are supposed to communicate and the Faculty and departments are supposed to communicate, as are Heads of Departments with the management body in meetings at leadership level.

However, the results of the interview analysis reveal the communication structure at this organisational level does not work as intended. According to respondents, departments and the management body communicate over the heads of the Faculty which undermine the Faculty's authority and possibilities

²¹ The Delegation Order Dnr 271/99.

to communicate with departments. An example of this is given in the following quotation.

R7 ..the organisation is so diffuse, regarding the triangle of Rector the Faculty and departments... and they're supposed to cooperate and that isn't easy. Decisions and communications are sometimes kept between departments and the rector, while the Faculty isn't included. So, it's hard to get this to work, I think. (later)...some Heads of Departments use their advantage to go directly to the Rector, having a kind of "direct-channel", where they can have decisions made and not have to go via the formal and circuitous Faculty route.

Excluding the faculty in the communication process blocks dialogue between departments and Faculty. Consequently, there is a discrepancy between the intended and actual communication structure, and respondents perceive the actual communication structure as characterised as diffuse and informal. Since a learning organisation is characterised by clear communication structures, this organisational characteristic does not match this requirement.

The second organisational characteristic, *the creation of parallel structures*, relies on the results of the interview analysis only and refers to the perception that the management body has taken the initiative to create structures that work parallel to the Faculty - which undermine the Faculty's work and its ability to communicate with departments. The following quotation gives example of this.

R11 ..we have a delegation order that defines the authority of the Faculty but, for example, we made a budget for research as a suggestion to the Rector, which was decided by the board. But there was a group created that worked together with the Vice Rector with the budget, parallel to the Faculty, so the Faculty could not finish their budget and give suggestions... (later)... if they gave this assignment to a function (Faculty, my notation), it wouldn't be possible to get other directives from another created group...

Accordingly, respondents understand the management creates parallel structures that block communication. This contrasts with the characteristics of a learning organisation and consequently, this organisational characteristic does not match those in the theoretical model.

The third organisational characteristic, *unreliable information and delayed communication*, relies on the results of the interview analysis only and refers to the perception that the exclusion of the faculty in the communication process and the creation of parallel structures have produced unreliable information and delayed communication. According to respondents, departments get different information from different sources at the same time, and consequently, it is difficult to

judge the accuracy of given information and relate it to their planning. As a result, departmental planning is delayed, which has consequences at disciplinary level since discipline planning is dependent on the departments. In the end, this influences the communication and decision-making processes at lower organisational levels. The quotations below give examples of parts of these interpretations.

R4 ...it's a little bit messy, because you're so dependent on so many others in order to plan your own activities...

R1 ... one problem that has become obvious this year is the lack of cooperation with the faculty...(later)... we need so much time to communicate with the faculty...

Consequently, there is unreliable information and delayed communication within the university, which does not match the requirements of the theoretical model.

Communication between Central Service Units and Departments

Data analysis resulted in the identification of three organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *diffuse communication structure*, *informal communication structures* and *unclear quality of communication*.

The first organisational characteristic, *diffuse communication structure*, relies on qualitative data. As was described regarding a previous organisational level, interview respondents as well as respondents in the document analysis²² perceive the communication structure as diffuse, which influences the communication processes negatively. One example of this is given in the quotation below.

R11 ..there were so many individuals involved in it, many different individuals from different units and departments and they haven't been in contact with one another...

Since a learning organisation is characterised by clear communication structures, this organisational characteristic does not meet the requirements of a learning organisation.

²² The Work Authority Report, 2001.

The second organisational characteristic, *informal communication structures*, relies on qualitative data. Critical incidents from the interview analysis reveal there are informal communication structures that are used in order to get answers or influence decision-making processes. In particular, there is a tendency to turn directly to the Rector, over the heads of others, according to interview respondents. This result is also supported by the document analysis (see the quotation below), also used as an example of management and leadership levels to illustrate lack of communication.

D They understand the distribution of responsibility between management body, the roles of Rector, Vice Rector and Pro Rector are unclear, which results in an increased need for communication with the Rector, who isn't available (The Work Authority Report, 2001, pp. 2, group interview with Heads of Departments)

Since a learning organisation is characterised by open and direct communication structures, this organisational characteristic does not meet those requirements.

The third organisational characteristic, *unclear quality of communication*, relies on the results of the interview analysis only. Here, analysis resulted in the identification of two descriptions of the communication process within the university. One is described as controlled from above and one as bottom-heavy. For example, respondents described the university as top-steered by the management body, where communication is heading in one direction only. This indicates the communication is characterised by monologue. The following quotation gives an example of this.

R7 ...the management body wants control over the processes and can't delegate to underlying levels, so they're involved in everything...

As mentioned, the communication process was also described as dialogical and bottom-heavy, where a large number of individuals and groupings are involved in decision-making processes, vertical as well as hierarchical, in the organisation. According to the respondent below, the striving for consensus is characteristic of these communication processes.

R11 ...this gaining of approval process... they're preparing decisions in forty groups before decision-making, huh, which is frustrating... (later)... it lies in the academic culture that everything should have consensus and then you realize how difficult it is to achieve that. Sometimes you have to make a decision and just accept it... (later)... there are advantages in discussing different solutions, achieving common agreement, but it's so difficult to get agreement from everyone because the group is so huge...

While the “controlled from above” description, characterised by monologue, does not match the characteristic of a learning organisation, the bottom-heavy description characterised by dialogue does. Consequently, respondents perceive the quality of communication differently and accordingly, this organisational characteristic has been concluded to match, as well as not to match, those of a learning organisation.

Communication Between Departments

Data analysis resulted in the identification of three organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *poor communication flow*, *lack of meeting arenas* and *poor quality of communication*.

The first organisational characteristic, *poor communication flow*, relies on all empirical data, which reveal that the quantity of communication of organisational members with other departments is poor. For example, results of document analysis²³ show that most teachers do not have much contact with others in other departments. The results of the interview analysis reveal that teachers’ contact and cooperation with those in other departments are dependent on which courses and educational programme they are teaching in. The results of the survey show that most respondents, 53 %, do not communicate with basic educational committees, which indicates that most respondents do not teach in multi-disciplinary educational programmes. Furthermore, between 76 - 97 % of the respondents estimated they seldom or never communicate with colleagues in other departments. However, differences between departments were identified. For example, respondents from the Department of Environmental Sciences and the Department of Engineering, Physics and Mathematics communicate more with the Department of Chemistry than with other departments and to a greater extent than other departments communicate with one another. Summarizing, there are tendencies showing that the communication flow between departments is poor, which differs from the characteristics of a learning organisation.

The second organisational characteristic, *lack of meeting arenas*, was identified in the qualitative analysis and is also mentioned in the norm system (see examples

²³ The Teachers Barometer, 2001.

there). The results of the interview analysis as well as document analysis²⁴ reveal a perception that there are no natural meeting arenas for organisational members outside the departments. This means, organisational members from different departments are not likely to meet and have a dialogue, where knowledge can be created or transferred. As a learning organisation is characterised by meeting arenas that over-bridge organisational boundaries, this organisational characteristic does not matches those of the theoretical model.

The second organisational characteristic, *poor quality of communication*, relies on quantitative data only, which reveals that most respondents estimate the quality of communication with other departments more as discussion than dialogue. For example, while 40 % of the respondents estimate the quality of communication between their department and other departments as discussion, 28 % estimate it as dialogue, 28 % as no communication at all and 5 % as monologue. Since a learning organisation is characterised by dialogue rather than discussion and most respondents estimate the quality of communication as discussion, this organisational characteristic does not meet the requirements.

Communication at Departmental level

Data analysis resulted in the identification of four organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *unclear quality of communication in departmental meetings*, *time limitation*, *drowning in information* and *good quality of communication at overall departmental level*.

The first organisational characteristics, *unclear quality of communication in departmental meetings*, rely on qualitative data only. For example, the results of the interview analysis reveal a perception among respondents that departmental meetings are characterised by monologue, where the Heads of Departments use the time to inform organisational members about ongoing activities within the university and what has been said in meetings in the management group and at the leadership level. The following quotation gives an example of this.

R6 The Head of Department informs us about what has been said in the management group and at different meetings. Everyone is informed about that.

²⁴ The Work Authority Report, 2000.

The results of the document analysis²⁵ appear to support this result since teachers have estimated they are satisfied with the information provided at departmental meetings, but dissatisfied with the possibilities of bringing up questions in the meetings. In other words, teachers seem to estimate that departmental meetings are used to inform, i. e. for monologue rather than for discussing or starting a dialogue. However, this result contrasts with the results of another document analysis²⁶ which reveals that secretaries and technicians estimate the information given, as well as the possibility to bring up questions for discussion in departmental meetings, as satisfactory. This means, secretaries and technicians are more prone to view the quality of communication in departmental meetings as discussions while teachers are prone to view it as monologue. Maybe, this is an expression of different professional demands and expectations or differences in their definition of quality of communication. Perhaps teachers have higher expectations than secretaries and technicians, however such an interpretation should be made with care. Since a learning organisation is characterised by dialogue and with respect to the ambiguous empirical data, this organisational characteristic is concluded to meet, as well as not to meet, these requirements.

The second organisational characteristic, *time limitation*, relies on the results of the interview analysis only. A perception was identified among respondents that can be referred to the quality of communication at departmental meetings: since most time is spent on informing about ongoing activities within the university, there is no time left to bring up questions for discussion or start a dialogue. The quotation below illustrates parts of this interpretation.

R3 I can raise questions and stuff like that at departmental meetings, of course. But if I really want to raise a question I'll go directly to the Head of the Department...

This indicates it is not necessarily the fact that the departmental culture does not allow questioning and dialogue, rather it is time limitation that influences the quality of communication negatively. Consequently, this organisational characteristic does not match those in a learning organisation.

The third organisational characteristic, *drowning in information*, relies on qualitative data only. Like the previous organisational characteristic, this characteristic is also linked to the quality of communication at departmental meetings. Results

²⁵ The Teachers Barometer, 2001.

²⁶ The Secretary and Technicians Barometer, 2001.

of interviews as well as document analysis²⁷ reveal that in spite of the information given at departmental meetings, respondents still have a perception they have no knowledge about what is going on within the university. Maybe, this is an expression of the fact that there is a limit to how much information that can be absorbed, that too much information results in the response to switch oneself off, or that respondents do not identify the relevance of the given information. Below, the quotation from a document gives an example of this.

D There is a huge weariness of information within the group. They wish that the information was selected. Being informed about everything, that is democracy. They perceive they have no knowledge about what is going on within the university. Maybe, they do not have the energy to absorb the information. (The Work Authority Report, 2001, pp. 6, group-interview with male teachers.)

The switching off and the perception of not be provided with proper and relevant information is not in accordance with the characteristics of a learning organisation.

The fourth organisational characteristic, *good quality of communication at an overall departmental level*, relies on the results of the survey analysis only. Here, the focus has been on respondents' estimations of the quality of communication at an overall departmental level, not only in departmental meetings. It turned out that 52 % of the respondents estimated their communication at departmental level was characterised by dialogue, 33 % by discussion, 5 % by monologue and 10 % estimated they have no communication at all with their department. Table 15 displays responses for each department.

Table 15. The quality of communication in each department in %.

Quality of Communication/ Department	Monologue	Discussion	Dialogue	No Communication
Social Sciences	-	23	57	20
Health & Caring Sciences	7	24	66	3
Business & Economics	8	44	28	20
Information Technology	15	35	50	-
Engineering, Physics & Mathematics	4	32	50	14
Chemistry	-	55	40	5
Environmental Sciences	-	17	83	-
Culture & Communication	-	35	61	4

²⁷ The Work Authority Report, 2000.

Consequently, most respondents see dialogue as the dominant quality of communication at an overall departmental level which matches the requirements of a learning organisation. Note that there are differences between departments.

Communication between Disciplines in the same Department

Data analysis resulted in the identification of one organisational characteristic that describes the university's conditions for meeting or not meeting the requirements of the theoretical model of a learning organisation, *good quality of communication*, and relies on the results of the survey analysis only. It turned out that most respondents, 61 %, define the quality of communication with other disciplines in their department as dialogue. 35 % of the respondents define the communication as characterised by discussion, 2 % by monologue and 2 % by no communication at all. No differences between departments were identified. Consequently, most respondents estimate the quality of communication between disciplines in the same department as dialogue, which matches the characteristics of a learning organisation.

Communication at Disciplinary level

Data analysis resulted in the identification of three organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *good quality of communication*, *poor communication flow* and *divergence in disciplinary cultures*.

The first organisational characteristics, *good quality of communication*, relies on all empirical data, which show that organisational members tend to define the quality of communication at disciplinary level characterised mainly as dialogue and secondly as discussion. For example, the results of the document analysis²⁸ reveal that teachers as well as secretaries and technicians estimate there is a satisfying discussion at a disciplinary level concerning their internal work. The results of the interview analysis show that respondents perceive the quality of communication at a disciplinary level characterised more as dialogue rather than discussion. At a disciplinary level, the communication is more informal, according to interview respondents, and dialogue takes place during coffee breaks, in

²⁸ The Teachers Barometer, 2001; The Secretary and Technicians Barometer, 2001.

corridors and in colleagues' offices. The results of the survey analysis reveal a similar pattern as 55 % of the survey respondents define the quality of communication at a disciplinary level as dialogue, while 40 % defined it as discussion. 2 % of the survey respondents defined the quality of communication as monologue, while 3 % estimated there is no communication at all. Summarizing, most respondents perceive the quality of communication at a disciplinary level as dialogue. Since a learning organisation is characterised by dialogue at all organisational levels, this organisational characteristic matches the requirements.

The second organisational characteristic, *poor communication flow*, relies on qualitative data, which shows there is a lack of discussions at a disciplinary level and that such communication is desired by teachers. For example, the results of the document analysis²⁹ reveal that teachers are dissatisfied with the quantity, as well as quality, of pedagogical discussions at a disciplinary level. Furthermore, the results of the interview analysis show that respondents with teaching tasks perceive the disciplinary culture itself to allow dialogue and pedagogical discussions but there is not enough time for this because of the heavy workload. This perception is also supported by the result of another document analysis³⁰, where male teachers in particular perceived time limitations as having the most influence in blocking communication at a disciplinary level. Accordingly, there are tendencies showing that respondents estimate a poor communication flow at a disciplinary level, which does not match the characteristics of a learning organisation.

The third organisational characteristic, *divergence in disciplinary cultures*, relies on the results of the interview analysis only and refers to the identification of differences in disciplinary cultures which influence the quality of communication. For example, the results of the interview analysis show that the quality of communication at a disciplinary level is dependent on inter-personal relationships and their ability to create a culture that allows dialogue. The quotation below gives an example of this.

R3 At a disciplinary level, there's more freedom of speech, absolutely, but that's something you create.

The divergence in disciplinary cultures means there might be differences in the quality of communication as well. Accordingly, it can be assumed there are dis-

²⁹ The Teachers Barometer, 2001.

³⁰ The Work Authority Report, 2001.

ciplines that are characterised by a high communication flow and dialogue, and disciplines characterised by a poor communication flow and discussions. Furthermore, it is also possible there are disciplines characterised by a high communication flow and discussions, and disciplines characterised by a poor communication flow and dialogue. Consequently, there is a divergence in disciplinary cultures that influences the quality of communication. With respect to the divergences where some of them are assumed to be characterised by dialogue and others are assumed to be characterised by discussion, this organisational characteristic is concluded to match, as well as not to match, the requirements of a learning organisation.

Communication from Bottom-up

Data analysis resulted in the identification of four organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *diffuse organisation*, *poor degree of communication flow*, *increased hierarchy*, *organisational black holes* and *illusory democracy*.

The first organisational characteristic, *diffuse organisation*, relies on qualitative data and refers to the perception among respondents that there are difficulties in manoeuvring within the organisation because the communication structures are perceived as difficult to identify. According to interview respondents, there are difficulties in knowing to whom to turn to and communicate with, and sometimes a lot of time is spent to find out how to manoeuvre within the organisation. The quotations from a document give examples of this organisational diffuseness.

- D A new delegation order has been developed. In spite of this, there is practical unclarity regarding which organisational functions have which responsibility... (later).. This unclarity constitutes a basis for psychological pressure and stress among organisational members. (The Work Authority Report, 2001, pp. 2)

- D At departmental level it functions well, but not outside departments. There are parallel structures. There are many involved in the same issues, sometimes several departments. Documents are moved around and there are difficulties in getting answers. Who makes decisions about what? They do not know who is responsible for what and there is a need to clear this up. They are calling around in the organisation, but there is always someone else that are supposed to be contacted, which is time-demanding. (The Work Authority Report, 2001, pp. 7, group interview with secretaries)

The results of the interview analysis show the same tendency.

R12 I have to ask about it, but I don't know where to turn and how to manoeuvre...
 (later)... So, I have to ask how to manoeuvre...

Accordingly, respondents perceive organisational structures as diffuse, which influences organisational members' ability to communicate negatively. A learning organisation is characterised by openness in its communication and clear structures and consequently, this organisational characteristic does not match such requirements.

The second organisational characteristic, *poor degree of communication flow*, relies on all data and refers to organisational members' degree of communication with higher organisational levels. As the previous organisational characteristic has shown, there is a perception among organisational members that the communication structures are becoming diffuse within the university. This diffuseness influences the degree of communication flow between lower and higher organisational levels negatively. For example, the results of the document analysis give an example of this.

D They perceive there is a gap between activities (at lower organisational levels, my notation) and the management.
 (The Work Authority Report, 2001, pp. 8, from group interview with Rector of Studies).

The results of the interview analysis support this result. In addition, the results of the survey analysis reveal that 66 % of the respondents do not communicate with the faculty at all, 48 % do not communicate with central administration at all, 50 % do not communicate with the Departmental Boards or Basic Educational Committees at all, and 81 % do not communicate with the management body at all. Consequently, there tends to be a poor degree of communication flow from lower organisation levels to higher, which contrasts with the characteristics of a learning organisation.

The third organisational characteristic, *increased hierarchy*, relies on the results of the interview analysis only and refers to the perception among respondents that the formal communication structure has grown. The quotation below gives an example of this.

R15 ..it's always like that person is supposed to contact that person.
 Specific channels exist...

The increased hierarchy has made communication processes more time-demanding. Furthermore, it influences the quality of communication since people do not always speak directly to one another - instead they tend to communicate through others. A learning organisation is characterised by clear structures and direct communication and consequently, this organisational characteristic does not match those requirements.

The fourth organisational characteristic, *organisational black holes*, relies on the results of the interview analysis only and refers to the perception among respondents that their attempts to communicate are blocked in the hierarchy (see also results in the norm system: organisational defensive routines). As mentioned in the previous organisational characteristic, with increased hierarchy organisational members at a grass-root level sometimes speak through others. For example, respondents said they turn to their Head of Department or a leader in order to make their voice heard at a higher organisational level. However, the results of the interview analysis show the capacity of Heads of Departments to communicate and influence higher organisational levels is limited, since respondents representative of Heads of Departments perceive they have difficulties in communicating with and influencing higher levels. The following quotation from an interview gives an example of this.

R2 I'm in a middle position. I can work down in the organisation, but there isn't much I can do upwards in the organisation.

According to respondents, their attempts to communicate seem to disappear in an organisational black hole since there is no response. The quotation below gives an example of one perception among respondents at a grass-root level.

R4 ...there isn't openness within the university. It's often closed, I think... (later) ... it's no idea to try to do that, because no one would be interested in listening anyway. I get that understanding by listening to people who have tried to contact others, tried to get answers from particular individuals, but you never hear from them, you never get an answer. They've called or left messages, or sent mail, but they don't hear from them. So, there are two reasons to not even try: first, I don't know where to turn and second, I get the feeling "so what, why should I care?"

Accordingly, respondents perceive their attempts to communicate upwards in the hierarchy are blocked by organisational black holes, which contrasts starkly with the characteristics of a learning organisation.

The fourth organisational characteristic, *illusory democracy*, relies on qualitative data. In documentary as well as interview analysis, respondents talked about the

fact that management sometimes orders organisational members to leave suggestions about different issues, which can be viewed as a possible means for organisational members to communicate upwards in the hierarchy. However, respondents do not recognize themselves in the documents that are produced at a management level which are supposed to relate to organisational members' suggestions. This gives respondents the feeling that everything is already decided before they are asked to produce suggestions, and that there is an illusory democracy within the university. The quotation from a document below gives an example of this

D The management wants organisational members to give their suggestions on different issues. Often, there is a short notice to reply. They never see the product, and if they do, they do not recognize it. There is a sense that it is already decided anyway. Someone expresses it as it is like twenty points in appearance democracy. (The Work Authority Report, 2001, pp. 7).

The results of the interview analysis support this result. The perception that the communication with the management body is illusory does not match with the characteristics of a learning organisation, where communication at all levels is characterised by dialogue.

Result Summary & Conclusions

Data analysis resulted in the identification of twenty-four organisational characteristics at different organisational levels that describe if and how the university matches the requirements of the theoretical model. Of the twenty-four organisational characteristics, three of them turned out to meet the requirements of the theoretical model, seventeen do not and four meet, as well as do not meet, the requirements. With respect to the overwhelming dominance of organisational characteristics that do not meet the requirements, the communication system as a whole is concluded not to match the characteristics of a learning organisation.

In Table 16, results, their reliance on empirical sources and conclusions are displayed. Identified organisational qualities regarding communication at different organisational levels are summed up and it is concluded whether they match the characteristics in the theoretical model or not. (+) means that organisational qualities are concluded to meet the characteristics in the theoretical model, (-)

means they do not meet the characteristics and, (+, -) means they meet, as well as do not meet, the requirements in the theoretical model.

TABLE 16. Results and conclusions: the Communication System.

Organisational level	Empirical Source	Conclusion (+, -)
Communication between the management & leaders	Document Interview Survey	-
Communication between the management body, the faculty & departments	Document Interview	-
Communication between central service units and departments	Document Interview	-
Communication between departments	Document Interview Survey	-
Communication at departmental level	Document Interview Survey	-
Communication between disciplines in the same department	Survey	+
Communication at disciplinary level	Document Interview Survey	+, -
Communication bottom-up	Document Interview Survey	-

The Norm System

A learning organisation is characterised by the allowance and encouragement of questioning, the production and absorbance of new ideas, experimenting and risk-taking. Furthermore, such an organisation allows mistakes as well as conflicts and uses them as learning opportunities to improve and develop core processes. In addition, cooperation and knowledge transfers that cross organisational boundaries are encouraged.

Questioning

Data analysis resulted in the identification of three organisational characteristics that describe if and how the university matches the requirements of a learning organisation regarding questioning: *poor atmosphere for questioning*, *organisational defensive routines* and *only first order questioning and changes allowed*.

The first organisational characteristic, *low atmosphere for questioning*, relies on all the empirical data and refers to the perception among respondents that the atmosphere for questioning, debate and criticism are poor. For example, the results of the survey analysis show that respondents are uncertain whether questioning is allowed or not since their responses were spread equally. Respondents' uncertainty in their responses indicates there is no strong culture for questioning within the university, which is supported by the results of the document analysis³¹ as well.

According to interview respondents, it is a myth that the organisation is open and characterised by freedom of speech. Instead, the university is viewed as "closed", which is contrary to the characteristics of the theoretical model, where a learning organisation is viewed as an open system, externally as well as internally. The quotation below gives an example of this.

R4 There's no openness within the organisation. It's very closed, I think...

³¹ The Teachers Barometer, 2001; The Secretary and Technicians Barometer, 2001.

Since a learning organisation is characterised as an open organisation, where questioning is not only allowed but even encouraged, this organisational characteristic does not meet the requirement of the theoretical model.

The second organisational characteristic, *organisational defensive routines*, relies on the results of the interview analysis only and refers to identified specific behaviours that are activated when sensitive questions are raised that challenge existing mental models, according to the interview respondents. Organisational defensive routines are expressed in a diffuse way within the organisation, which is illustrated in the quotation below.

R3 ...it feels like there's an unofficial system striving to hide things and sweep them under the carpet, in order not to have to look at the underlying aspects.

The results of the interview analysis reveal that respondents perceive there is a widespread and systematic avoidance of allowing questions that might result in an examination and considerations regarding changing fundamental values and the organisational core, features which are characteristic of a learning organisation. Five different sub-characteristics, or examples of organisational defensive routines, were identified in the interview analysis; *denial and hiding*, *silence and censoring information*, *blaming others*, *watching one another's backs*, and *the fear of upsetting others*.

In brief, *denial and hiding* is expressed by meeting questioning or pressure for change with silence which means that communication disappears into the organisational "black holes" that earlier were described.

I Are you allowed to criticise the organisation?

R8 Maybe, but no one would really care...

Denial and hiding can also be expressed by *censoring information*, adjusting it to expectations in order not to upset others. Examples of this are given in the evaluation system.

Blaming others means moving around the causes of problems, which balances pressure for change and keeping the culture and structures stable. By blaming others, no one, or everyone is responsible, and no one or everyone can be blamed. Accordingly, the energy is channelled into blaming rather than examin-

ing the underlying structures of the problem and problem-solving. The quotation below indicates parts of this.

R15 ... well, if something goes wrong and it isn't my fault, somehow it becomes natural to blame someone else...

Watching one another's backs refers to the creation of alliances and the dependence on people in higher positions and on the people in the alliances. By watching one another's backs, people try to position themselves in powerful groupings to ensure their protection and their interest for future advantage.

R3 I guess this happens in all organisations, but it feels like watching one another's backs is about, for example, people get positions.... I mean, you're doing favours for one another and you might get assignments or funding. You might get things because you 're doing someone a favour.

Fear of upsetting others is about the avoidance of hurting others' feelings or the fear of losing reputation and status (see also the results in the sanction system), or the fear of becoming the next target for criticism. This result in a politically correct behaviour which is concerned with being polite and smooth, according to respondents, who also claim that this includes the avoidance of bringing up sensitive questions that might hurt others. The following quotations give examples of this.

R4 Sometimes it feels like people are afraid of criticizing because they're afraid of reprimands. To me it seems it's a bit exaggerated, but I can't deny them to have that feeling, so to speak.

R2 ...sometimes you maybe don't say things, because you don't want to hurt them and you don't know how to bring it up and how they will respond to it.

Organisational defensive routines are forces that are activated when the organisation is questioned and challenged, and balance pressure for changes. Such behaviour is contrary to the characteristics of the theoretical model and consequently, this organisational characteristic does not match the characteristics of a learning organisation.

The avoidance of sensitive questions leads us to the third identified organisational characteristic, *only first order questioning and changes are allowed*, which relies on the results of the interview analysis only and refers to the perception among respondents that questioning is only allowed as long as it is within the frame of existing mental models and within the existing norms of politically correct behaviour. The quotation below indicates this.

- R3 Somehow, there's no willingness in the system to change. There's no willingness to even look at the underlying fundamental assumptions. The only interesting thing is first order changes. There's too much resistance to second order changes.

By only allowing the kind of questioning that fits within already existing mental models, there are questions that will never be raised that could have influenced the university's ability to improve and develop its internal core processes. Since the theoretical model of the learning organisation is characterised by the allowance and encouragement of all questioning and in particular concerning core values, this organisational characteristic does not match the requirements.

Absorb & Use New Ideas

Data analysis resulted in the identification of four organisational characteristics that describe if and how the university matches the requirements of a learning organisation: *non-encouraging culture*, *driving forces*, *socialization process* and *organisational defensive routines*.

The first organisational characteristic, *non-encouraging culture*, relies on all empirical data and is related to the perception among respondents that the university's ability to absorb and use new ideas is poor. Instead, the organisational culture is described as non-encouraging, and there is a tendency to focus more on what is not working than on encouraging the production of new ideas. Examples of this are given from interview respondents in the quotations below.

- R4 ...but I don't think there's an encouraging... (culture, my notation)... there aren't encouraging politics in the university to criticise or suggest improvements and so on. No, I don't think there is.

- R12 I guess we are pretty bad at getting a positive response, we are more prone to criticise when something doesn't work.

The results of the survey show the same tendencies, since respondents were prone to estimate departmental administration as well as disciplinary colleagues as more non-encouraging than encouraging, on the one hand. On the other hand, these organisational levels were not perceived as opposing new ideas either, which indicates that the production and suggestion of new ideas is dependent on individual interest and strivings rather than on an organisational culture that encourages it. Note that most of the respondents, about 70 %,

could not estimate the management's responses to new ideas. The results of the document analysis³² support these results as well. Accordingly, there is a non-encouraging culture for producing, absorbing and using new ideas within the university, which contrasts with the characteristics of a learning organisation. Therefore, this organisational characteristic does not match the requirements.

The second organisational characteristic, *driving forces*, relies on the results of the interview analysis only and refers to respondents' perceptions that there is one possible way to market new ideas within the organisation. In order to succeed in implementing new ideas, there need to be driving forces that constantly fight for ideas, even if it takes years to reach the turning point. However, as some interview respondents underlined, many of the driving forces give up because of the tough climate for implementing new ideas. The following quotation gives an example of this.

R9 Here, we had an opportunity to profile ourselves. But no, four or five years later they woke up and invited persons from other universities who had succeeded in it; they had three hundred students in the area and we had none. So, my feelings were just: I don't give a damn!... At the same time, you start to doubt your own ability to be smart and to market your ideas within the university.

From one perspective, driving forces meet the requirements of a learning organisation, since they represent a way to implement ideas. From another perspective, they do not meet the characteristics as the fight for success in implementing new ideas is viewed as difficult. Consequently, this organisational characteristic matches as well as does not match the requirements of the theoretical model.

The third organisational characteristic, *the socialization process*, relies on the results of the interview analysis only and refers to how organisational members learn to give up their ideas and their fight to implement them, as it is too energy demanding to constantly fight for their ideas. The quotation below gives an example of this.

R6 As a new comer, you have a lot of inspiration... (later) ... but that has decreased. Somehow, you're forced to that, but you don't feel good about it. To become invisible is never funny.

Another respondent gave an example of a critical incident where he/she tried to get approval for a new idea about how to improve internal processes within

³² The Secretary and Technicians Barometer, 2001; The Teachers Barometer, 2001.

the university. However, when he/she experienced how tough the climate was to implement new ideas, she/he gave up as he felt forced to do so. By giving up, he/she accepted and internalized the organisational culture and became socialized to the university's common culture. Thereby, he/she became one of many "invisible" people, as the respondent above puts it. Socialization processes occur in all organisations, at all organisational levels. However, in this case the socialization process resulted in the reproduction of existing mental models, where core processes must not be questioned or challenged. This is contrary to the characteristics of a learning organisation and consequently, this organisational characteristic does not meet the requirements.

The fourth organisational characteristic, *organisational defensive routines*, relies on the results of the interview analysis only and has also been identified and described under the headline "questioning". As mentioned, organisational defensive routines are activated when existing mental models are questioned and challenged. Ideas that do not fit the mental models might be so challenging, that these routines are activated and the routines are assumed to be activated as long as the pressure to challenge is there. As noted, organisational defensive routines hinder the university's capacity to absorb and use new ideas and might be an explanation as to why the atmosphere for implementing new ideas is perceived as tough among interview respondents. Consequently, this organisational characteristic does not match the requirements of the theoretical model.

Experimenting

Data analysis resulted in the identification of six organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *encouragement, divergence in disciplinary traditions, workload, academic tradition, lack of funding and competition*.

The first organisational characteristic, *encouragement*, relies on the results of the interview analysis only and refers to the perception among interview respondents that there is an encouraging atmosphere for experimenting within the university, at least as long as experiments do not fail. An example of this is illustrated by the following quotation. Note that part of the quotation has been used in the sanction system as well.

- I Are organisational members allowed to experiment?
- R5 Yes, I guess, as long you don't fail.
- I What gives you that impression?
- R5 In research, you're supposed to experiment. It's another story if you experiment on another organisational level, but I think you're allowed...

The encouraging atmosphere indicates that experimenting is a desired behaviour within the organisation and creates good conditions for an experimental environment within the university. From this perspective, this organisational characteristic meets the requirements of the theoretical model. However, as the culture also signals that failures are not allowed, this risks influencing organisational members' willingness to experiment and to take risks negatively as experiments might fail. Such signals are not in accordance with the characteristics of a learning organisation and from this perspective this organisational characteristic does not match the requirements. With respect to the two possible interpretations, this organisational characteristic is concluded to meet as well as not to meet the requirements of the theoretical model.

The second organisational characteristic, *divergence in disciplinary traditions*, relies on the results of the interview analysis and refers to the perception that there are a variety of disciplinary traditions, where some are assumed to allow more experimenting, while others do not have such strong traditions of experimenting. The following quotation gives an example of this.

- R5 ...this is a huge organisation, containing many departments and units, including a large number of organisational members. I think there's a huge difference in the experimenting culture between departments and disciplines.

With respect to the perceived divergence in disciplinary cultures, this organisational characteristic is concluded to match as well as not match the requirements of the theoretical model.

The third organisational characteristic, *workload*, relies on qualitative data and refers to respondents' perceptions that the workload is so heavy that there is no time left to experiment, e.g. developing new courses. This negatively influences the ability to experiment. The results of the document analysis³³ support this result. The following quotation illustrates this.

³³ The Work Authority Report, 2000.

R1 ...if we talk about those who only teach, they have so much teaching and larger student groups, more examinations and everything, so they don't have the energy to do more than teach their courses. Development work isn't of their highest priority.

A workload that does not allow time and space for experimenting is not in accordance with the characteristics of a learning organisation, where experimenting is viewed as a part of the daily work. Accordingly, this organisational characteristic does not match the requirements.

The fourth organisational characteristic, *academic tradition*, relies on the results of the interview analysis and refers to the fact that experimenting is traditionally and culturally not included as a natural part of the daily work within the university. Instead, experimenting is viewed as something extraordinary that requires additional time and funding, according to respondents. The following quotation gives an example of this perspective on experimenting within the organisation.

R1 ...there are so many possibilities to develop courses and create new teaching forms, but it should be done within the frame of the existing funding and people aren't used to that. They demand additional funding in order to do that.

The norms do not prescribe experimenting as a natural part of the daily work. They indicate additional funding as a prerequisite in order to experiment, which influences the ability to experiment within the university negatively. Since a learning organisation is characterised by a culture where experimenting is viewed as a natural part of the daily work, this organisational characteristic does not meet the requirements of the theoretical model.

The fifth and sixth organisational characteristics, *lack of funding*, and *competition*, rely on the results of the interview analysis. These two organisational characteristics are related to and depend on each other. The results of the interview analysis reveal a perception that there is a lack of funding to apply for in order to make it possible to engage in experimenting activities. As there are restricted resources, disciplines and departments have to compete with one another. The funding system is spread at departmental level and each department strives to keep its budget in order. Therefore, experimenting over departmental boundaries such as the development of multi-disciplinary courses is obstructed because departments have to compete for funding at the same time as they are expected to cooperate, as some interview respondents have pointed out. The quotation

below illustrates this. Note that the quotation has been used in the sanction system as well.

R14 ...multi-disciplinary work function well in research but not in education. It's demanded by the students and by the Rector, but it's assumed to be organised by the departments, which isn't working because they are sub-optimizing. Who's responsible for this?... (later) there are no incitements or funding for this, because funding steers behaviour. It seems like they haven't thought this through regarding multi-disciplinary education.... (later)... since there are two departments involved, it isn't working, so there's a need for a steering mechanism that forces a part of the budget to be invested in this and then the Head of Department becomes more willing...

The fifth and sixth organisational characteristics are examples of culture as well as structures that influence the experimenting activities within the university. As the structures were built up in such way that departments have to compete for decreased funding, experimenting is not systematically supported within the organisation. Consequently, this organisational characteristic does not match the requirements.

Mistakes

Data analysis resulted in the identification of three organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *ambivalence*, *fear* and *the academic culture*.

The first organisational characteristic, *ambivalence*, relies on the results of the interview and survey analysis and refers to the uncertainty as to whether mistakes are allowed or not within the university. The following quotation from an interview, illustrates.

I How does the university deal with mistakes?

R5 I don't know, I think they sweep it under the carpet, huh.

The quotation indicates that mistakes are hidden and that there is a tendency not to talk about mistakes made, which was also expressed by interview respondents. If mistakes are not known and people do not talk about mistakes that were made, they cannot learn from others' mistakes either. This risks resulting in a situation where organisational members may repeat mistakes. A respondent's ambivalence can be seen as an expression of the university's hidden and vague norm system which tends not to provide organisational members

with any guidance about how to behave regarding mistakes. Such uncertainty can be seen from two perspectives. One positively influences risk-taking and the allowance of making mistakes since no one would care anyway, and one that negatively influences risk-taking and making mistakes as there is a risk of penalties.

Respondents' ambivalence was dominant in the results of the survey analysis too and there was a tendency that the higher organisational level the measure focused on, the greater the ambivalence. However, there was a weak tendency to regard mistakes as failures within the university and to see the university not using mistakes as learning opportunities. As the tendency was weak, it indicates there is no strong culture for the allowance of mistakes and consequently, the culture does not provide organisational members with any guidance through its norms as to how to relate to mistakes made. A learning organisation is characterised by the allowance of risk-taking as well as mistakes, and with respect to respondents' ambivalence, this organisational characteristic is concluded to meet as well as not to meet the requirements of the theoretical model.

The second organisational characteristic, *fear*, relies on the results of the interview analysis and refers to the uncertainty among respondents about whether mistakes are allowed or not within the university. In particular, respondents were unsure how mistakes made would be dealt with within the organisation and therefore, there was a fear of making mistakes. Consequently, this fear influences respondents' willingness to take risks negatively. The following quotation gives an example of this.

- I Are organisational members allowed to make mistakes within the university and how does the organisation deal with mistakes made?
- R7 Well, mistakes made can result in consequences. I guess it depends on in what way you are failing. I mean, everyone makes a mistake sometimes, we're all just human beings, huh.... (later)... there are high demands on the staff and if you fail, I think you're easily replaced.... (later)... you don't talk about your mistakes, you sweep them under the carpet, you don't want to go there....

The results of the interview analysis reveal that respondents do not only link making mistakes with the risk of being replaced. It turned out that their fear of making mistakes is also related to the fear of losing face in front of others and getting a bad reputation.

- R7 No, people pay more attention to your mistakes and they might lose their trust in you and you might be replaced. Somehow, I can understand it has to be that way, and particularly if you have a responsible position on a higher organisational level, you can't afford to fail.

The risk of losing face and reputation in front of colleagues, not to mention the risk of losing positions and status are likely to make organisational members less willing to take risks and to talk about the mistakes they have made. Organisational members therefore are not likely to learn from one another's mistakes which are contrary to the characteristic of a learning organisation. Consequently, this organisational characteristic does not match the requirements of the theoretical model.

The third organisational characteristic, *the academic culture*, relies on the results of the interview analysis and refers to the norm identified in academic work where, according to interview respondents, mistakes are not talked about. Academic work is in many ways characterised by individualism and individual endeavour without insight and interference from others. The quotations below give an example of this.

- R9 I feel that you are discreet that you don't talk about failure and mistakes, because you don't want others to discover your mistakes.
- R10 As a teacher, you're supposed to have so much knowledge and skills, and you're assumed to do your work... (later)... and there's no insight in teacher's work, so if someone fails, no one will notice it. There's really no control of teachers' work....

As previously, by not talking about mistakes, organisational members cannot learn from one another's mistakes and accordingly, this organisational characteristic does not match the characteristics of a learning organisation.

Conflicts

Empirical data reveal there are conflicts within the university. For example, the results of the survey reveal that 80 % of the respondents do estimate there are conflicts within the university. The results of the interview and document³⁴ analysis show the same tendency. However, the presence of conflicts is not sufficient to meet the requirements of the theoretical model. After all, all organisations can be assumed to have internal conflicts. The questions arise then,

³⁴ The Work Authority Report, 2001.

as to what kinds of conflicts exist and how are they dealt with within the university.

Data analysis resulted in the identification of three organisational characteristics that describe if and how the university matches the requirements regarding the conflicts of the theoretical model: *sub-cultural conflicts*, *divergence of strategies to deal with conflicts* and *weak overall organisational culture for using conflicts as learning opportunities*.

The first identified organisational characteristic, *sub-cultural conflicts*, relies on ambiguous empirical data and resulted in five sub-characteristics, i. e. different kinds of conflicts that were identified: *disciplinary*, *between professions*, *between old servants and new comers*, which also can be referred as to a conflict between humanities and social sciences, on the one hand, and natural sciences and technology, on the other hand, *between management and faculty* and *between management and organisational members in general*.

Disciplinary conflicts refer to the definition of disciplines and the creation of boundaries in relation to other disciplines. Sometimes, disciplines might have difficulties in distinguishing themselves from other disciplines and there is a risk of stepping into others' territories. Consequently, disciplines do sometimes compete with one another and accordingly, conflicts arise. The quotation below gives an example of this.

R13 ...in this case, the research area in which I am active, for different reasons a person has been recruited in another disciplinary group that somehow covers my discipline. So, there has emerged a competitive situation, then.

Conflicts between professions are related to status. The interview analysis resulted in the identification of two different conflicts related to professions. The first one is the conflict between teachers and researchers. The second is the conflict between academic staff on the one hand and secretaries and technicians on the other hand. However, it might be worth noting that the academic staff represented in the interview material did not identify the latter conflict while secretaries and technicians did. The following quotations are examples of the two conflicts mentioned above.

R4 Well, looking at promotion and getting on, it feels like... even though they're talking about pedagogical skills should be valued on the same premises as scientific skills, it's still not equal...

R6 ...the reason why I can't relate to myself as a part of the university, is that it's we and them.

I We? Who are we?

R6 We are those who aren't academics, who aren't teachers, Ph. D. students, or have an academic degree. It's we and them.

The conflict between faithful old servants and new comers, or humanities and social sciences on the one hand, and natural sciences and technology on the other hand, refers to conflicting, fragmenting sub-cultural differences within the university, and was identified in the interviews as well as in the document³⁵ analysis. While faithful old servants referred to those who were a part of the organisation from its beginning, i. e. humanities and social sciences, new comers refers to those who have been recruited more recently, i. e. natural sciences and technology. According to the faithful old servants themselves, they are a part of and have remained loyal to the traditions of the organisation while they view newcomers as disloyal and who sub-optimize in a way that relates to more business-like attitudes. According to newcomers, old servants are ineffective, have an inability to make decisions and try to resist all kinds of changes. The following quotations illustrate parts of these interpretations.

R1 If I'm allowed to express myself in an extreme way, I would like to say that these old servants from humanities and social sciences, who've been here since the 1970's, have a network and a way to relate to the organisation in common. Then we have these new fields, natural sciences and technology, recruited from Gothenburg, Luleå, Åbo and business life and from them I've experienced a high degree of disloyalty... (later)... Well, they're to a high degree sub-optimizing, e. as long as we win the action, it doesn't matter how it turns out for the university...

R13 ..everybody thinks that you can't push questions forward, you can't take any shortcuts ' here. Instead, there's supposed to be a resistance within the system... It's so important to move forward slowly and be critical all the time. And even if everyone knows this is not a problem, they're still digging in it as if it was a problem.

The results of the interview analysis reveal that this conflict is perceived as reinforced by the structures in the funding system where natural sciences and technology secure more funding than humanities and social sciences.

The conflict between the management body and faculty was identified among interview respondents, as they had noticed that these elements have problems in communicating and agreeing on how to distribute authority and decision-making

³⁵ The Work Authority Report, 2001; group interview with Head of Departments.

between them. *The conflict between the management body and organisational members* in general, was expressed by interview respondents' suspicion about management, characterised by a we-and-them attitude. Both these two conflicts are also indicated in the results of the communication system.

The identified sub-cultural conflicts were tested in the survey. It turned out that the results of the survey differ from the results of the interview analysis since respondents were prone to disagree on suggested conflicts. However, there was an open question in the survey, allowing respondents to write down their own identified conflicts which resulted in the identification of six conflicts; *teachers and doctoral researchers*, which seems to be concerned with whether academics have research experience and show similarities with the conflict between teachers and researchers, *men and women*, i. e. *between genders*, where male respondents argue that women are favoured within the organisation while female respondents argue that men are the ones who are favoured, *younger and older women*, where older women work against or hold back younger women, *internal disciplinary conflicts*, often related to different ontological and epistemological perspectives, *one unit/part and the entire university*, where one unit/part becomes invisible within the organisation and, *personal vendettas*, based on individuals who dislike each other. However, data is ambiguous regarding the identification of sub-cultural conflicts. In conclusion, there are sub-cultural conflicts but respondents tend to identify different ones. Since a learning organisation is characterised by the presence of conflicts, this organisational characteristic matches the requirements of the theoretical model.

Looking at the way conflicts are dealt with within the university leads to the second organisational characteristic, *divergence of strategies to deal with conflicts*, which relies on the interview analysis. Three sub-characteristics were identified: *conflicts as dialogue towards improvement and development*, *conflicts as competition* and *conflicts are denied or repressed conflicts*. Of these three sub-characteristics, one of them meets the requirements of the theoretical model while two of them do not. With respect to the divergence of strategies for dealing with conflicts this organisational characteristic matches as well as does not match the requirements of the theoretical model.

The first sub-characteristic, *conflicts as dialogue towards improvement and development*, views conflicts as useful in order to start a true dialogue, characterised by listening to different perspectives and allowing criticism. This strategy includes

striving towards consensus and the incontrovertible views, opinions and arguments win acceptance. The quotation below illustrates this.

R1 Looking at departmental and disciplinary level, we need conflicts in order to develop our discipline, in order to define the discipline. That kind of conflict results in development and we really need that kind of conflict, we need to support such conflicts in order to continually improve our discipline... (later)...then we have this discussion and we all listen to the arguments and those who have the best logic and arguments wins...

Norms that demand the use of this strategy have much in common with the characteristics of the theoretical model since it uses conflict in order to improve, develop and learn. Consequently, if these norms exist, the characteristics of a learning organisation are met with.

The second sub-characteristics, *conflicts as competition*, seems to apply when the parts are fragmented into different fractions, where the fractions are convinced they are right and all they have to do is to convince the others that they are. These fractions are characterised by us-and-them thinking and the communication is characterised by a mixed-discussion where the parts are more interested in having their voices heard rather than listening to other opinions and broadening their mental models. The following quotation indicates parts of this interpretation.

R8 Sometimes you try to raise a question, but they say this is a part of a greater issue, so there's no point discussing it, or they say that they have the solution themselves so they don't listen to our suggestions...

R15 ...it's much about guarded territories. It's not about what is in the best interest of the entire university, or in the best interest of an educational programme. It's about what is in the best interest of my organisational unit.

This norm is contrary to the characteristics of the theoretical model since there is no listening or true dialogue that is likely to result in development and learning. Consequently, this strategy does not match the characteristics of a learning organisation.

The third sub-characteristic, *conflicts are denied or repressed*, is about the systematic avoidance of admitting that there is a conflict and the inability to deal with it. It is as if everyone knows there is a conflict but pretends there is not. This denial is related to the fear of being upset or upsetting others and therefore, such situations are avoided. This can also be seen as an activated organisational defensive routine. The following quotation illustrates this.

R3

We were handpicked by this group that was responsible and it turned out they had, of course, picked persons they thought would agree on everything... (later)... but this particular person wasn't asked to join the group, because they thought it would be too hard because there would be conflicts.

This strategy does not fit the characteristics of the theoretical model since the strategy is to avoid conflicts that might be productive. In other words, conflicts are not used in order to develop and learn and so this norm does not meet the requirements of a learning organisation.

The third organisational characteristic, *weak overall organisational culture for using conflicts as learning opportunities*, relies on the survey analysis. The university's culture for dealing with conflicts was tested in the survey and it turned out that 56 % of the respondents disagree that the university uses conflicts as learning opportunities. Furthermore, the results of the survey reveal that respondents are uncertain how the university views conflicts as their responses were so divergent. It could be assumed that there exist sub-cultural differences at disciplinary as well as at departmental levels as to how to deal with conflicts but there is no empirical evidence for this. Consequently, survey respondents are uncertain, on an overall organisational level, how conflicts are dealt with and most of them estimated that the university does not use conflicts as learning opportunities. Since a learning organisation is characterised by an organisational culture that uses conflicts in order to improve, develop and learn, this organisational characteristic does not match the requirements of the theoretical model.

Knowledge Transfer

Data analysis resulted in the identification of eight organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *organisational fragmentation, or organisational islands, no overview and use of competencies, the high degree of specialization, an individualistic culture, freedom of physical work location, no strong culture and lack of supportive structures on overall organisational level, weak culture and structures for knowledge transfer on departmental level and divergence of subcultures and substructures for knowledge transfer on a disciplinary level.*

The first organisational characteristic, *organisational fragmentation*, relies on qualitative data. According to interview respondents, organisational fragmentation is a result of the organisational expansion - following by the transition to univer-

sity. The expansion has forced departments to function as “organisational islands” and stimulated them to become more independent and loosely coupled to other parts as well as to the organisation itself, or so respondents argue. This indicates that organisational members have no natural meeting arenas for knowledge transfer. For example, the results of the document analysis³⁶ show that teachers in different departments have little contact with one another. Furthermore, document analysis³⁷ reveals that teachers as well as secretaries and technicians do not view the study of other departments’ work and core processes as particularly important. This indicates that knowledge transfer between departments is not a priority. The quotation below gives an example of how organisational fragmentation is expressed in the interviews.

R8 everybody runs their own business and budgets... it’s like small kingdoms... (later) ...
and everyone tries to get more funding for their own activities, everyone is so self-
assertive that they seem not be aware of the rest of the organisation.

Organisational fragmentation and the loss of natural meeting arenas hinder knowledge transfer across organisational boundaries, which is contrary to the characteristics of a learning organisation. Consequently, this organisational characteristic does not meet the requirements of the theoretical model.

The second organisational characteristic, *the loss of an overview and use of competencies*, relies on the interview analysis and is also related to organisational fragmentation. According to respondents, there are competencies that are not identified within the university and are not used and transferred to other organisational levels within the university. The following quotation gives an example of this.

R3 I’m annoyed about the inability to use the competence that exists within the
organisation... (later)... I mean, we have everything, we’re like a little society
and there’s no willingness or, I don’t know what it’s all about, to use the
competencies within the organisation...

The loss of the overview and use of internal competencies means there is a missed opportunity to use and transfer knowledge within the university, which is not in accordance with the characteristics of a learning organisation. Consequently, this organisational characteristic does not match the requirements.

The third organisational characteristic, *the high degree of specialization*, relies on the interview analysis and refers to respondents’ perception that teachers’ work has

³⁶ The Teachers Barometer, 2001.

³⁷ The Teachers Barometer, 2001; The Secretary and Technicians Barometer, 2001.

become more specialized. In particular, respondents talked about the fact that the organisational expansion and fragmentation, together with increased student population and decreased funding has forced teachers to become more specialized in their knowledge fields. This has resulted in less cooperation within, as well as between disciplines, i. e. influenced knowledge transfer negatively. This is illustrated in the following quotations.

- R1 ...our funding decreases and we get larger student groups and in order to manage an acceptable work environment, teachers have to specialize and only teach in their specialization... (later) .. we have this tendency to specialize... (later).. This leads to an increased need to cooperate, in order to integrate the discipline. All teachers teach in their specialization, which make teachers more or less irreplaceable. Consequently, teachers are present even when they're ill, the system gets more vulnerable (because of the specialization and irreplaceable, my notation) and other negative consequences.
- R9 It doesn't feel like we're colleagues at all, who're supposed to work towards a common goal, we just focus on our job... (later) ... and optimize and minimize your own effort.

The increased specialization has decreased cooperation and knowledge transfer within as well as between disciplines, which is not in accordance with the characteristics of a learning organisation.

The fourth organisational characteristic, *the individualistic culture*, relies on the interview analysis and refers to the fact that the high degree of specialization has resulted in a higher degree of individualism within the university. According to respondents, the individualistic culture is so strong that individuals sometimes tend to assert themselves to an extent that is at the expense of colleagues and the organisation itself. The quotation below illustrates how a respondent views the individualistic culture.

- R10 ...So, sometimes personal gain is more important than the welfare of the department and the entire university.

Respondents perceive that there are norms that prescribe individual strivings that hinder cooperation and knowledge transfer within the university. Since cooperation and knowledge transfer characterize a learning organisation, this organisational characteristic does not meet the requirements.

The fifth organisational characteristic, *freedom of physical work location*, relies on the interview analysis only and refers to the freedom of the academics to choose when to work and from where, according to respondents. The norms that aca-

ademic staff follow prescribe that they do not need to be physically present at the university.

R13 In the university, principally you can work here at nights and be absent in the day.
That is okay. Or, you can be here at the weekends and not in the weeks. You can be
away for a week and no one knows where you are. That is totally acceptable here.
This results in you're never being sure that a person will be at work the next day...

The freedom of physical work location tends to influence knowledge transfer negatively. After all, if organisational members do not meet, knowledge cannot be developed. Consequently, this organisational characteristic does not match the requirements of the theoretical model.

The sixth organisational characteristic, *no strong culture and lack of supportive structures for knowledge transfer on overall organisational level*, relies on the survey and document analysis. The university's culture and structures for knowledge transfer were tested in the survey at different organisational levels, overall organisational level, departmental level and disciplinary level. It turned out that at on an overall organisational level, most respondents, between 43% and 49%, disagree, between 36% and 44% do not know if there exists a culture of and internal structures for knowledge transfer within the university. These results are supported by the results of the document analysis³⁸ which reveals there is no systematic knowledge transfer within the university - between parts, regarding education, research and cooperation with society. Consequently, there is no strong culture and a lack of supportive structures for knowledge transfer at an overall organisational level, and the organisational characteristics do not match those of a learning organisation.

The seventh organisational characteristic, *a weak culture and structures for knowledge transfer at departmental level*, relies on the survey analysis only. The results of the survey regarding knowledge transfer at departmental level reveals that respondents tend to be uncertain whether there are structures for knowledge transfer at departmental level as their responses were divergent. However, differences between departments were identified which explains the diversity in responses and means that there are departments that have a more defined culture and structures for knowledge transfer than other departments. Nonetheless, no department could be regarded as having a strong culture of and well-developed structures for knowledge transfer with reference to respondents' responses.

³⁸ Annual Report, 2001.

However, with respect to the differences identified between departments this organisational characteristic is concluded to match as well as not match the requirements of the learning organisation.

The eight organisational characteristic, *divergence of sub-cultures and sub-structures for knowledge transfer on disciplinary level*, relies on the survey analysis. For example, the results of the survey analysis reveal there is a weak tendency among survey respondents to estimate that there is a culture and structures for knowledge transfer at a disciplinary level. In particular, 66 % of the respondents estimated that disciplinary meetings are used as structures for knowledge transfer. As mentioned earlier in the norm system, disciplinary differences have been identified which means that some disciplines can be assumed to have stronger norms in favour of and more developed structures for knowledge transfer than others. This means that some disciplines function more in accordance with the characteristic of a learning organisation than others. In accordance with these differences, this organisational characteristic is concluded to meet as well as not meet the requirements of the theoretical model.

Result Summary & Conclusions

Data analysis resulted in the identification of twenty-seven organisational characteristics that describe if and how the university matches the requirements of the theoretical model. Of the twenty-seven organisational characteristics, nineteen of them turned out not to meet the characteristics of a learning organisation, one meets the requirements, while seven of them meet as well as do not meet the requirements. With respect to the overwhelming dominance of organisational characteristics that do not meet the requirements, the norm system as a whole is concluded not to match the characteristics of a learning organisation.

Table 17 show results, their reliance on empirical sources and conclusions. Identified organisational qualities are summed up and it is concluded whether they match the characteristics of the theoretical model or not. (-) means does not meet the characteristics in the theoretical model, (+, -) means does not meet the characteristics in the theoretical model.

Table 17. Results and conclusions: The Norm System.

Characteristics of the theoretical model	Empirical Source	Conclusion (+, -)
Questioning	Document Interview Survey	-
Absorb & Use New Ideas	Document Interview Survey	-
Experimenting	Document Interview	-
Mistakes	Interview Survey	-
Conflicts	Document Interview Survey	+, -
Knowledge Transfer	Document Interview Survey	-

The Sanction System

In this study, a learning organisation is characterised by a sanction system whose criteria are obvious to organisational members, and that rewards and thereby reinforces desired behaviours such as questioning, producing new ideas, experimenting and knowledge transfer. The absence of rewards or presence of some penalties may balance organisational members' behaviours and the desired behaviours are not likely to emerge. In other words, the sanction system brings concrete meaning to cultural features. Data analysis of the sanction system is therefore focused on the same qualities as in the norm system.

Questioning & Conflicts

Data analysis resulted in the identification of three organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *risking penalties*, *unclear criteria for penalties* and *unclear criteria for rewards*.

The first organisational characteristic, *risking penalties*, relies on the interview and survey analysis and refers to the perception that there is a risk in questioning sensitive issues and there is an uncertainty as to whether such questioning will end in conflict and penalties. The quotation below gives an example of this.

R5 ... but it depends on what it's about and how serious it is, I think but there will be consequences...

I What kind of consequences?

R5 Well, you can be excluded, or avoided...

The ambivalence about how questioning and conflict will be dealt with, and the risk of penalties, results in the avoidance of sensitive questions and issues that might upset others, according to interview respondents. The results of the survey analysis reveal a similar pattern, since survey respondents were uncertain as to how the university views and deals with conflicts. The results of the survey analysis also show that respondents tend to vary between ambivalence and the belief that conflicts are avoided within the university rather than dealt with, which might indicate a fear of conflicts because of the risk of penalties. Consequently, respondents are ambivalent about questioning leading to the risk of

penalties and tend to estimate that conflicts are avoided within the university. This contrasts to the characteristics of the theoretical model.

The second organisational characteristic, *unclear criteria for penalties*, relies on the interview analysis and refers to the perception among respondents that questioning and conflict might result in penalties, but the criteria for such penalties are unclear and hidden. The following quotation gives example of this.

R2 ...I can't say too much either, because you should be discreet... (later)... so
I should think before talking, so I wouldn't step on someone's toes...

I What happens if you step on someone's toes?

R2 ...then I will be branded...(later)... if I say more, it will only affect me, so
I'd better keep quiet...

As the quotation shows, there is a perception that it is better to be cautious about what is said and how it is said to avoid upsetting others, starting conflicts and risking penalties. Note, penalties can be social as well as structural as respondents pointed out. The vague criteria for penalties do not provide any guidance as to how to behave and are likely to obstruct organisational members' willingness to speak up, question and risk conflict. This is not in accordance with the characteristic of a learning organisation.

The third organisational characteristic, *unclear criteria for rewards*, relies on the interview analysis and refers to the perception among respondents that successful organisational members are those who are politically correct, i. e. apply organisational defensive behaviours (see also the results in the norm system) and consequently, avoid sensitive questions. There was a perception that such political correctness might result in promotion to administrative tasks, or being hand-picked for projects or decision-making groupings, but the criteria for such rewards were not clearly identified. The quotations below illustrate parts of this interpretation.

I How should you behave in order to be a successful organisational member within
the university?

R5 Well, do not argue with the management. I think you'd better use compliance, absolutely.

R15 ...I think it has much to do with the ability to speak for yourself, being in the right department or unit, at the right moment, and establishing the right contacts.

The quotations indicate that compliance i. e. organisational defensive behaviour is rewarded. Such behaviour might result in promotion and a move closer to the management body which was identified as an example of reward by interview respondents. The following quotation indicates this.

R6 .. there is a tendency that salaries increase the closer to the management you work. If the title of the position is different, then you get a rise... the tasks aren't more demanding or qualified, but the salaries are higher, so I guess that would be a step up in your career.

The perception that compliance might be rewarding indicates that rewards are perceived as arbitrary, and that the criteria for such rewards are unexpressed and hidden for organisational members. This vagueness does not match the characteristics of a learning organisation where criteria for rewards as well as penalties are obvious to everyone.

Experimenting & Mistakes

Data analysis resulted in the identification of four organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *unclear criteria and structures, absence of rewards, risking penalties and unclear criteria for penalties.*

The first organisational characteristic, *unclear criteria and structures*, relies on interview and document analysis and refers to a perception that the vague criteria and structures in the sanction system generally also apply to experimenting and mistakes made. For example, the results of the document analysis³⁹ show that the criteria for salaries are unclear for organisational members. The quotation below indicates how teachers tend to perceive the criteria for salaries as unclear. It also indicates that salaries are not related to performance and taking initiatives, of which experimenting is an example.

D "They don't estimate they have the right salaries in relation to their performance, and the criteria for wages are unclear" (*The Teachers Barometer, 2001, p. 10*).

Unclear criteria and structures do not provide organisational members with any guidance about how to behave, i. e. what kind of behaviour is desired and undesired regarding for example experimenting and risk-taking and consequently,

³⁹ The Secretary and Technicians Barometer, 2001; The Teachers Barometer, 2001

this organisational characteristics does not meet the requirements of the theoretical model.

The second organisational characteristic, *absence of rewards*, relies on the results of the interview and survey analysis. It turned out for example that survey respondents are uncertain whether experimenting is rewarded or not with a tendency to see experimenting as not being rewarded. The interview analysis revealed a perception that experimenting is allowed as long as there are no failures. The quotation below gives an example of this. Note that the quotation has also been used in the norm system as well.

Are organisational members allowed to experiment?

R5 Yes, I guess, as long as you don't fail.

This indicates that experimenting is allowed as long there are no failures, but experimenting as an activity is not being rewarded. The absence of rewards regarding experimenting does not support experimenting activities and contrasts with the characteristics of a learning organisation.

The third organisational characteristic, *risking penalties*, relies on the interview analysis (see previous quotation) and refers to the perception that experimenting is allowed as long as there are no failures, i. e. mistakes. Failures equal the risk of penalties. If there is a risk of being penalized for mistakes made, organisational members' willingness to take risks and to experiment decreases which is contrary to the characteristics of a learning organisation. Consequently, this organisational characteristic does not meet the requirements of the theoretical model.

The fourth organisational characteristic, *unclear criteria for penalties*, relies on the interview and survey analyses and refers to the uncertainty about what basic behaviours are penalized. For example, the results of the interview analysis reveal that there is a perception on the one hand that organisational members can make huge mistakes without being penalized, and on the other hand they can make mistakes and be penalized. In other words, there is a perception that the criteria for penalties are arbitrary. The following quotations illustrate how respondents perceive penalties as subtle and vague.

- I If an organisational member fails in work, what happens to that person?
- R6 That's a difficult question. I have no idea. ... (later) ... I have an example, and honestly, it wasn't dealt with in particular good way. It went so far before anyone dealt with it, and suddenly this person was transferred and his/hers tasks changed. And the last one to know this, was the person him/herself.... (later)... This person just disappeared from the discipline, and it was really strange. No one at the discipline knew, and he/she just disappeared, and there were a lot of rumours about why he/she was transferred...
- R4 ...(the respondent talks about an organisational member who made a mistake, my notation) ... he/she was transferred from teaching, but not because of that. Instead they searched for another reason to transfer him/her, so they didn't have to confront him/her with the real cause...(later) ...it's difficult, because there are only rumours, so you never know exactly. ... (later).. but if they never explicitly express this behaviour is not accepted, and people hear things, and start to talk

The results of the survey analysis support this lack of clarity in the criteria for penalties however there was a tendency that there might be freedom from penalties. The unclear criteria for penalties do not provide organisational members with any guidance as to how to behave appropriately, and the risk of being penalized is most likely to influence their willingness to experiment negatively because there is always a risk that experimenting may result in failure. Such unclear criteria are contrary to the characteristics of a learning organisation.

Production of New Ideas

Data analysis resulted in the identification of one organisational characteristic that describes the university's pre-requisites to match the requirement in the theoretical model, *the absence of rewards*, and relies on unambiguous empirical data. For example, the results of the interview analysis reveal that no respondent identified and defined the production of new ideas as being rewarded. The results of the survey analysis show the same tendencies since between 41% and 62 % of the respondents tend to estimate they are not rewarded for presenting new ideas (while between 19% and 33 % of the respondents did not know), not by salary, nor promotion or participation in conferences or by acknowledgement by colleagues or bosses. The latter is also supported by the results of the document analysis⁴⁰ as well. The following quotation from a document gives an example.

- D ...respondents estimate there is an absence of explicit acknowledgement of their work of improvement, from the departments and bosses as well as the management body. (*The Teachers Barometer 2001, p.13*)

⁴⁰ The Teachers Barometer, 2001.

The absence of rewards regarding the production and suggestion of new ideas contrasts to the characteristics of a learning organisation which rewards these things.

Knowledge Transfer

Data analysis resulted in the identification of two organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *individual behaviour is rewarded* and *no incentives for cooperation and knowledge transfer on departmental level*.

The first organisational characteristic, *individual behaviour is rewarded*, relies on interview analysis and refers to respondents' perceptions that research and self-asserting behaviours are criteria for rewards within the university. The quotation below illustrates this.

R3 You should be very focused on yourself... (later)... you should apply for
Ph.D. studies, definitely.

Research has been described particularly as characterised by individualistic and introvert behaviours by the interview respondents, with little interest in cooperation and interaction with others. The following quotation gives an example of this.

R1 ...the research environment attracts individuals that are asocial. They're dedicated
to their work.... (later).. these individuals don't have such well developed social needs.
Instead, they prefer to work alone, and their reward might be having an article published...
I mean, they are not socially disabled, but in order to be an excellent researcher you might
have to be dedicated in this way...

According to the result of the interview analysis, such introvert behaviours contribute to the creation of guarded territories which work against cooperation and knowledge transfer. By rewarding such individualistic behaviour, cooperation and knowledge transfer will not be a priority for organisational members. Instead, they are likely to put their efforts into individualistic work such as research. Consequently the structures in the sanction system do not support cooperation and knowledge transfer, instead they reinforce the opposite. This organisational characteristic therefore has been concluded not to match the requirement of the theoretical model.

The second organisational characteristic, *no incentives for cooperation and knowledge transfer on departmental level*, relies on the interview analysis and refers to a department's ability to cooperate with and transfer knowledge between departments. As mentioned in the vision system⁴¹, the university has the intention of striving towards multi-disciplinary cooperation, crossing disciplinary and departmental boundaries. However, the interview analysis reveals the structures in the sanction system hinder this and that management has been unwilling, according to respondents, to change and remove structural hindrances for such cooperation and knowledge transfer. The quotation below gives an example of this. Note that the quotation has been used in the norm system as well.

R14 ...multi-disciplinary work function well in research but not in education. It's demanded by the students and by the Rector, but it's assumed to be organised by the departments, which isn't working because they are sub-optimizing. Who is responsible for this?... (later) there are no incentives or funding for this, because funding steers behaviour. It seems like they haven't thought this through regarding multi-disciplinary education.... (later)... since there are two departments involved, it isn't working, so there is a need of a steering mechanism that forces a part of the budget to be invested in this and then the Head of Departments becomes more willing...

The respondent also points out that as long as the structural hindrances are not removed, and as long as there are no economical incentives, departments are not likely to cooperate and transfer knowledge since it is too energy demanding and they risk losing funding to other departments. In other words, the structures in the sanction system have created competition between departments about funding which negatively influences their ability to cooperate and transfer knowledge. Consequently, this organisational characteristic does not match the requirements in the theoretical model.

Result Summary & Conclusions

Data analysis resulted in the identification of ten organisational characteristics that describe if and how the university matches the characteristics of a learning organisation. Of the ten identified organisational characteristics, none turned out to meet the requirements of the theoretical model. Consequently, the sanction system as a whole is concluded as not matching the characteristics of a learning organisation.

⁴¹ Document analysis, Karlstad University's vision, policy document.

Table 18 shows results, their reliance on empirical sources and conclusions. Identified organisational qualities are summed up and it is concluded whether they match the characteristics of the theoretical model or not. (-) means the organisational qualities are concluded as not to meeting the characteristics in the theoretical model.

Table 18. Results and conclusions: The Sanction System

Characteristics of the theoretical model	Empirical Source	Conclusion (+, -)
Questioning & Conflicts	Interview Survey	-
Experimenting & Mistakes	Document Interview Survey	-
Production of New Ideas	Document Interview Survey	-
Knowledge Transfer	Interview	-

The Evaluation System

In this study, a learning organisation is characterised by scanning and discovering changes externally, in the environment, as well as internally, in its internal processes that might influence the organisation and its outcomes. Feedback on given efforts are fundamental for an organisation that is learning. Furthermore, such an organisation is characterised by the identification of problems and the examination of underlying structures, i. e. the causes of the problems in order to solve them efficiently. This also means that a learning organisation evaluates problem-solving processes to make sure problems are really solved and to be able to improve its routines for problem-solving. Consequently, it is characterised by the identification of feedback on earlier actions.

Data Gathering

Data analysis resulted in the identification of three organisational characteristics that describe if and how the university matches the requirements in the theoretical model: *the absence of systematic routines for data gathering about the environment, some systematic routines for quantitative data gathering about internal processes and absence of systematic routines for qualitative data gathering about internal processes.*

The first organisational characteristic, *the absence of systematic routines for data gathering about the environment*, relies on the results of the document analysis. For example, the results of the document analysis⁴² reveal there are no systematic routines for data gathering about how leading and competitive universities are working. Furthermore, document analysis⁴³ shows that secretaries and technicians estimate there is a lack of routines regarding consumers' apprehensions about the university's internal processes and performances. Consequently, there are tendencies revealing there is an absence of systematic routines for data gathering about the environment, which contrasts with the characteristics of a learning organisation.

The second organisational characteristic, *some systematic routines for quantitative data gathering about internal processes*, relies on qualitative data. For example, the results of the interviews show that some routines for systematic quantitative data gath-

⁴² The Annual Report, 2001.

⁴³ The Secretary & Technicians Barometer, 2001.

ering are ruled by the National Agency of Higher Education, which requires information, mainly quantitative data, according to the interview respondent below, about the university's internal processes in its effort to evaluate the quality of universities.

R11 ...then you have to show the facts, about the staff and what they produce, what kind of courses they teach in... (later)... we want positive judgements in order to be competitive and attract students, so we want to show them the *numbers*.

Furthermore, the results of the document analysis⁴⁴ reveal that in cases where there are routines for data gathering about internal processes, they are quantitative. For example, the university gathers data about the number of registered students, the number of whole year student performances, the number of disputations, the amount of funding for research, the volume of research, the number of projects involving society etc. The result of the document analysis shows that systematic routines for quantitative data gathering about internal processes occur on a regular basis, which matches the characteristics of the theoretical model.

The third organisational characteristic, *absence of systematic routines for qualitative data gathering about internal processes*, relies on all empirical data. For example, document analysis⁴⁵ reveals there is no systematic qualitative data gathering in a number of areas, such as the quality processes within the university, staff competencies, scanning and analysing supporting processes within the university, students' study experiences and course evaluations. Furthermore, the results of the interview analysis support this result as no respondent could identify or define any systematic routines apart from how to take care of staff with alcoholic problems or to deal with sexual harassments. The quotation below gives an example of this.

I Do you know if there are any formal systematic routines for problem-solving within the organisation, and if you know of such routines, what kind of problems are they concerned with?

R3 I have no idea. Maybe if it's about... sexual harassment, and stuff like that... maybe there are some routines for that.... But no, I have no idea.

The result of the survey show that 42 % of the respondents disagree with the statement that the university annually gather information about its internal

⁴⁴ The Annual Report, 2001.

⁴⁵ The Annual Report, 2001.

work, while as many as 44 % do not know. Furthermore, 39 % of the respondents disagree that the university annually gathers information about its quality work, and as many as 61 % do not know. The results of the document ⁴⁶ analysis support this picture. The uncertainty among survey respondents might be an expression of the absence of systematic routines for qualitative data gathering about internal processes, but such an interpretation should be made cautiously. Consequently, this organisational characteristic does not meet the requirements of the theoretical model.

Data Processing

Data analysis resulted in the identification of seven organisational characteristics that describe if and how the university matches the requirements of the theoretical model: *lack of systematic routines for data processing, no combination of different data, difficulties to examine underlying structures of problems, lack of pro-active problem identification, organisational defensive routines, fire-fighting strategy, and repeated problem-solving.*

The first organisational characteristic, *lack of systematic routines for data processing*, is based on the results of the document analysis⁴⁷, which reveal that quantitative data is processed, but not further analysed. The results of the document analysis also show that results from different quantitative data are not related to one another, which falls into the second identified organisational characteristic, *no combination of different data*. Furthermore, the results of the document analysis reveal that the results of processed data are not systematically used in order to identify problems and/or to improve internal processes. All in all, there are tendencies showing there is a lack of systematic routines for data processing and there is no combination of different data within the university. These two organisational characteristics do not meet the requirements of the learning organisation.

The lack of systematic routines for data gathering, data processing and combination of different data might produce the existence of the third identified organisational characteristic, *difficulties to examine underlying structures of problems*,

⁴⁶ The Secretary and Technicians Barometer, 2001.

⁴⁷ The Annual Report, 2001.

which relies on the results of the document⁴⁸ and interview analyses but it is also indicated by the results of the survey analysis. For example, the results of the survey analysis reveal that 39 % of the respondents estimate that the university does not examine to what extent underlying structures cause problems, but 17 % estimate that the university does so. As many as 44 % do not know whether the university examines underlying structures, which might indicate that they have no insight into, or knowledge about the university's routines for problem-solving, but such an interpretation should be made carefully. Furthermore, results of the interview analysis reveal respondents have a perception that the university does not examine the causes of its problems. The quotation below gives example of this.

R10 ...they don't always identify the causes of problems, because they don't examine the causes enough...

Thus in summarizing, there are tendencies showing that the university is perceived to have difficulties in examining the underlying cause of problems, which contrasts with the characteristics of a learning organisation.

The fourth identified organisational characteristic, *lack of pro-active problem identification*, relies on the interview analysis, and relates to stories told by respondents about critical incidents that reflect the university's ability to pro-actively identify and solve problems. According to these respondents, the university's ability for pro-active problem identification is poor. The quotation below, where the respondent talks about the university's slow responses to the reform of 1992, gives an example of this.

R11 ... for example, the university was in a red in the budget this year. Other universities, of the same size, with pretty much the same costs, were in the clear in their budgets. What's the problem? What are they doing, that we don't? Here, I think we could have been much more pro-active. I do not think the red ink just came about as like a letter by the post man. There must have been clues there, tendencies pointing in that direction, and why hasn't anyone gone through this, examined the causes of this tendency? ... (later)... It's hard for me to see if this is a result of uncontrolled finances, that no one has seen it - but at the same time, it shouldn't be possible in a large public authority organisation like this. I mean, such an organisation is extremely controlled all the time...

The lack of pro-active problem identification might be explained by the lack of systematic data gathering about the environment as well as about internal processes, and by the lack of systematic examination of underlying structures of gathered data. Since a learning organisation is characterised by pro-active prob-

⁴⁸ The Annual Report, 2001.

lem identification, this organisational characteristic does not match this requirement.

The fifth identified organisational characteristic, *organisational defensive routines*, relies on the interview analysis. Organisational defensive routines are grounded in the organisations' norm system, and therefore have been more closely described there. However, in the evaluation system, organisational defensive routines are expressed by denial or ignorance of problems, or by censoring or deleting information, according to the respondents. The quotations below give examples of this.

R15 ...I don't know how I should express this, but it feels like there's an unstated system to strive to hide things and sweep them under the carpet... in order to be excused from dealing with the underlying mechanisms.

R8 I often see the same problem repeatedly within the organisation... (later)... in one case it's about a person, there is a person in a powerful position that denies there's a problem.

R5 ... well, in this case, X (a persons name, my notation) instructed us to exaggerate the positive aspects in the report and hide the negative aspects...

The denial and deletion, or censoring, of information is contra productive for a learning organisation, where information is regarded as necessary in order to identify and solve problems effectively. Consequently, this organisational characteristic does not match the requirements in the theoretical model.

The sixth organisational characteristic, *the fire-fighting strategy*, relies on the results of the interview and survey analysis and refers to respondents' understandings of and estimations about the university's problem-solving strategy. The fire-fighting strategy was identified through information given by interview respondents about the university's problem-solving ability. According to interview respondents, the focus is placed on new, big and fairly dramatic problems that require quick solutions. This focus undermines the examination of underlying structures that may cause the problem, as well as old problems are not having any priority. The following quotations give example of this.

R12 They're fighting fires; they're doing that most acutely all the time. They're not pro-active and stuff like that. Largely I think it's like that, no prevention, but fire-fighting.

R15 In the healthcare system, they've been discussing disease prevention. Not just to give medicine to the sick...

R10

Old problems are neglected when new problems emerge. It's easier to focus on new problems instead.

The results are not validated by the survey analysis, since as many as 61 % of the survey respondents estimated they do not know how problems are prioritised. It seems as though the respondents have little insight into and knowledge about the university's problem-solving processes. However, of those respondents who were able to estimate the presence of a fire-fighting problem-solving strategy, 26 % of the respondents agree there is one, while 13 % disagree. Consequently, the university is perceived as ineffective in its problem-solving, which contrasts with the characteristics of a learning organisation.

The seventh organisational characteristic, *repeated problem-solving*, relies on data from the interview and survey analysis and refers to the university's ability to solve problems once and for all. For example, according to interview respondents, the university tends to repeatedly solve the same problem, which indicates previous problem-solving was not based on the examination of the underlying structures of the problems, and that the solutions are still influenced by the causes. The quotation below gives an example of this.

R1

If we (the university, my notation) were a learning organisation, at least in the sense I conceptualize learning, we would have to learn to avoid stepping into the same traps, which we've stepped into repeatedly. I think we can observe this, that we're making the same mistakes repeatedly, as an organisation.

The results of the survey analysis show that 50 % of the respondents estimate that the university does not learn from experience, as an organisation, while as many as 40 % of the respondents were uncertain. Furthermore, 46 % of the respondents estimate problems keep returning within the university, while 20 % of the respondents disagree and 34 % were uncertain. As mentioned earlier, the high degree of uncertainty indicates that survey respondents have little insight into and knowledge about the university's problem-solving ability. The results of the survey and interview analysis show that there is a tendency among respondents to view the university's problem-solving ability as not being effective. Consequently, this organisational characteristic does not match the requirements of the theoretical model.

Evaluation

Data analysis resulted in the identification of two organisational characteristics that describe if and how the university matches the requirements in the characteristics in the theoretical model: *lack of systematic routines for data evaluation* and *lack of systematic routines for improvement of problem-solving routines*.

The first organisational characteristic, *lack of systematic routines for data evaluation*, relies on empirical data (documents⁴⁹, survey as well as interviews) that show that neither the short nor long-term plans, nor the goals are planned for evaluation in order to checking their accordance with actual performances. Analysis of the documents also reveals that the university has no evaluation strategy for controlling that problems are really solved. The results of the survey analysis reveal that most respondents are ambivalent about the university's systematic routines for data evaluation, since 57 % of them estimated they do not know if there are such routines. Of those respondents who could estimate the university's routines for data evaluation, 40 % of them disagree that there are such routines, while 3 % of the respondents estimates there are. According to interview respondents, some routines exist for evaluation on lower organisational levels, such as course evaluation, but they are not systematically performed, and many teachers skip that work. Other results from the document analysis⁵¹ reveal that there are no evaluation methods for quantitatively gathered data. Instead, these data are used in order to steer the main processes within the university, such as education, research and cooperation with the society. In addition, there is a lack of the development of evaluation methods in a long line of areas within the organisation, according to the same document. A quite clear picture emerges from the analyses that shows that there is a lack of systematic routines for data evaluation, which is needed in a learning organisation to ensure that the quality of problem-solving processes is high. Accordingly, this organisational characteristic does not meet the requirements of a learning organisation.

The second organisational characteristic, *lack of systematic routines for improvement of problem-solving routines*, relies on the document and survey analysis. Here, the same picture appears. Document analysis⁵² reveals that secretaries and technicians estimate the university's ability to improve internal processes as a result of

⁴⁹ The Annual Report, 2001.

⁵¹ The Annual Report, 2001.

⁵² The Secretary and Technicians Barometer, 2001.

data gathering as poor. The results of the survey analysis reveal that most respondents, 57 %, are ambivalent as to if there are such routines. Of those respondents who could estimate the university's routines for the improvement of problem-solving routines, 38 % of them disagree that the university continually improve its routines, while 5 % agree that it does. The picture that the respondents give, shows that there is a lack of systematic routines for the improvement of problem-solving routines within the university, which contrasts with the characteristics of the theoretical model.

Result Summary & Conclusions

Data analysis resulted in the identification of twelve organisational characteristics that describe if and how the university matches the requirements of the theoretical model. Of the twelve organisational characteristics, eleven of them turned out not to meet the requirements of the theoretical model, while one did. The evaluation system as a whole is therefore concluded not to match the characteristics of a learning organisation.

In Table 19, results, their reliance on empirical sources and conclusions are displayed. Identified organisational qualities are summed up and it is concluded whether they match the characteristics in the theoretical model or not. (-) means that the organisational qualities are concluded as not meeting the requirements in the theoretical model.

Table 19. Results and conclusions: The Evaluation System

Characteristics of the theoretical model	Empirical Source	Conclusion (+, -)
Data gathering	Document Interview Survey	-
Data processing	Document Interview Survey	-
Evaluation	Document Interview Survey	-

The Overall Picture

When the analyses of the subsystems are put together, only one out of six subsystems meets the requirements of the theoretical model. The grouping system meets the requirements as it transcends professions and organisational boundaries which facilitate the creation of knowledge and knowledge transfer within the university. Although this quality seems to exist, there is no evidence that knowledge really is transferred within and between groupings in systematic ways.

The vision system is the subsystem that was concluded to meet as well as not meet the requirements of the theoretical model, as its organisational characteristics were balanced in relation to the characteristics of a learning organisation. In particular, the content of the vision and the ambiguous descriptions about the formulation process of the vision contributed to the requirements of the theoretical model. The systems communication, norms, sanctions and evaluation do not meet the requirements of the theoretical model. Most of the characteristic traits of these subsystems turned out not to be in harmony with the characteristics of a learning organisation. To summarize and conclude: as most subsystems do not meet the requirements of the theoretical model, the university does not match, or matches extremely poorly, the characteristics of a learning organisation.

Results of the System Theory Analyses

System Theory Analysis based on the Results of the Factor Analysis

As recalled, the factor analysis resulted in two components. The first component, labelled ethos, contained five indexes; two from the norm system, one measuring the absorbance of new ideas and one measuring the allowance of experimenting and mistakes, and indexes of the sanction, communication and grouping system. All these indexes were positive inter-correlated, between .58 and .68.

The second component, labelled accountability, contained four indexes; two from the norm system, one measuring knowledge transfer and one measuring the presence and dealing of conflicts, and indexes of the vision and evaluation system. All indexes had positive inter-correlations between .51 and .76 except one, the norm index measuring the presence and dealing with conflicts, that turned out to be negative interrelated (-.58) with the other indexes appearing in the component.

The norm system is divided into four indexes while the other subsystems have only one index each, which results from the fact that the norm system includes more variables than the other subsystems. The four different indexes in the norm system have fallen into two different components. The norm system is the only subsystem that inter-correlates with all the other subsystems. From a system theory perspective, this means that the norm system is positive inter-correlated with the other indexes and subsystems - with one exception -, which indicates that the norm system has mostly reinforcing links to the other indexes and subsystems.

One interpretation of these facts may be that the norm system has, as it has most links, the greatest influence on the other subsystems, and thereby on the entire system. Accordingly, the norm system might be the subsystem of greatest importance when describing and understanding the university's pre-requisites to function in accordance with the theoretical model of the learning organisation.

System Theory Analysis based on the Conclusions in the Subsystems

The conclusions about how well the subsystems meet the pre-requisites of the characteristics of a learning organisation are illustrated in a simple display (see Table 20).

Table 20. Conclusions of each subsystem; whether they match the characteristics of the theoretical model of the learning organisation or not.

	Meet the requirements of the theoretical model
Subsystem	
Vision	Yes & No
Grouping	Yes
Communication	No
Norm	No
Sanction	No
Evaluation	No

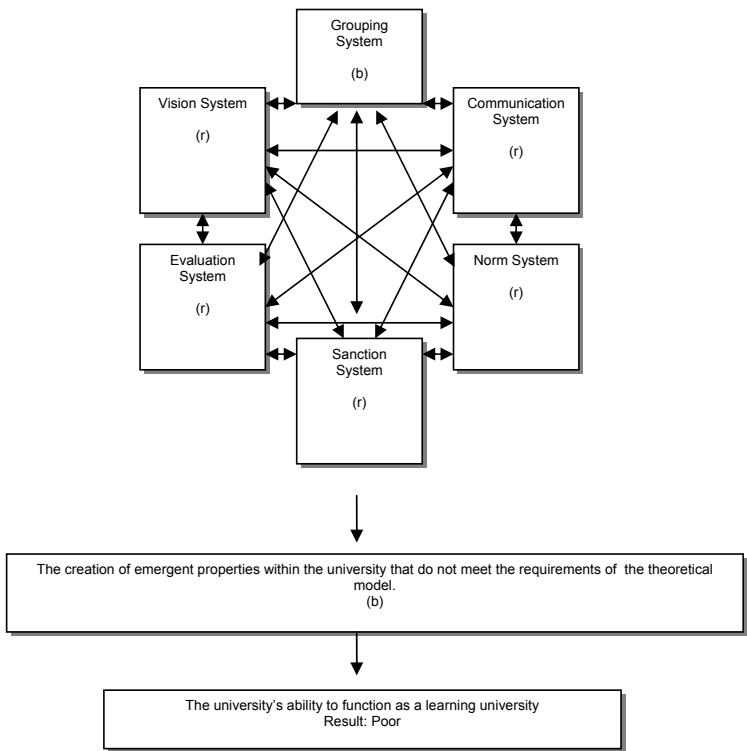
The four subsystems that do not meet the requirements of the theoretical model, the systems of communication, norm, sanction and evaluation, seem to be inter-related by a reinforcing link, since their inability to fulfil the requirements of the theoretical model are assumed to become stronger when put together. This assumption is based on, and thereby supported by, the system theoretic principle that one variable (subsystem) that has the same quality as another are reinforcing one another and produce more of the quality that was there from the beginning.

The vision system differs from these four subsystems as the vision system was concluded to meet as well as not meet the requirements of the theoretical model. It can be assumed that the vision system has balancing as well as reinforcing links to the four subsystems mentioned above. However, there are system theory principles that support the interpretation that the vision system, in spite of its difference to the other subsystems, gets involved in reinforcing feedback loops with the four mentioned subsystems. The involvement weakens the vision systems' balancing link to such an extent that the vision system can hardly influence the pre-requisites to meet the requirements of the theoretical model for the other subsystems or for the entire system.

The grouping system was the only subsystem that was concluded to meet the requirements of the theoretical model and consequently, it has a balancing link to the other subsystems. This indicates that the grouping system may influence the other subsystems, and mitigates the effects of the reinforcing links and feedback loops between the other five subsystems. However, according to system theory principles, it seems as the influence stream goes the other way around; that the strength of the reinforcing feedback loops between the five subsystems can be assumed to mitigate the balancing effect of the grouping system. Consequently, the results of the analysis reveal that out of six subsystems, five are more or less related by reinforcing links, which balances the university's capacity to function in accordance to the theoretical model of the learning organisation, while one subsystem, the grouping system, are related to the other five subsystems by a balancing link. Even though the grouping system's ability to influence the other subsystems is reduced by the reinforcing feedback loops from the other subsystems, the analysis indicates that the grouping system might be the subsystem of greatest importance when improving the university's capacity to meet the requirements of the theoretical model. The relations between the subsystems, the number and the strength of reinforcing links and feedback loops between them are, from a system theory perspective, assumed to produce emergent properties within the entire system, which would not be there without these relations. This means, the entity are more than the sum of its parts. In this case, the inter-relations produce and/or reproduce the organisational characteristics that do not meet the requirements in the theoretical model, and balances the university's ability to function in accordance with it.

An alternative way to shape the understanding of the interplay between the different subsystems as a result of the analysis is presented in Figure 1 where (r) stands for reinforcing link and feedback and (b) balancing link and feedback.

Figure 1. Results of the system theory analysis based on the summarized data analysis of the subsystems.



This system theoretical analysis supports as well as differs from the outcomes from the first one. Both analyses mostly indicate positive (i. e. reinforcing) multi-relations between subsystems - even though the subsystems have fallen into two different dimensions in the factor analysis. The outcomes differ as the factor analysis indicated that the norm system might be of greatest importance for the entire systems' ability to change its pre-requisites to meet the requirements of the theoretical model of the learning organisation, while the second analysis indicated that the system of grouping might have such potential. The non-corresponding results between the two system theory analyses are to some extent problematic and the question of why has to be raised.

One possible explanation may be that the results rely on different kind of data. Another possible explanation may be that there are organisational characteris-

tics that are common for all subsystems - a suspicion that emerged during the first analysis of empirical data in each subsystem.

System Theory Analysis based on the Re-analysis of Empirical Data in each Subsystem

A re-analysis of the empirical data of each subsystem was made to identify which organisational characteristics that were common to all subsystems and operated in the reinforcing feedback loop. This re-analysis mostly relies on the results of the interview- and document analysis. The re-analysis resulted in an identification of one common organisational characteristic that was present in all subsystems. This was a mental model, mainly grounded in the norm system, and often expressed by *organisational defensive routines* that seem to pervade the subsystems, and thereby, the entire university. For example, organisational defensive routines were identified as two organisational characteristic in the norm system expressed by *denial, hiding, silence and censoring information, blaming others, watching one another's back* and *the fear of upsetting others*.

The results of the sanction system reveal that organisational defensive routine are reinforced by the unclear criteria for rewards as well as penalties and by respondents understanding that the questioning of existing mental models risks resulting in penalties. Some quotations illustrates:

- R2 I can't say too much either, because you should be discreet... (later) ... so I should think before speaking, so I wouldn't step on someone's toes...
- I What happens if you step on someone's toes?
- R2 ...then I will be branded... (later) ... if I say more, it'll only affect me, so I'd better keep quiet...
- I How should you behave in order to be a successful organisational member within the university?
- R5 Well, don't argue with the management. I think you'd better be compliant, absolutely.

In the evaluation system, organisational defensive routines are expressed by *denial or ignorance of problems*, or by *censoring or deleting information*, according to interview respondents. Below, some quotations will be repeated as examples of this.

- R3 ...to sweep it under the carpet, not to admit there is a problem. It's like a school that don't admit that bullying exists, because that would mean the admitting that there are problems...
- R5 ...well, in this case, X (a persons name, my notation) instructed us to exaggerate the positive aspects in the report and hide the negative aspects...

In the communication system, organisational defensive routines were expressed by *organisational black holes* (silence), according to interview respondents, where their attempts to communicate upwards in the hierarchy are blocked and not responded to. Below, a quotation will be repeated as example of this.

- R4 ...it's no idea to try to do that, because no one would be interested in listening anyway. I get that understanding by listening to people who've tried to contact others, tried to get answers from particular individuals, but you never hear from them, you never get an answer. They've called or left messages, or sent mail, but you don't hear from them. So, there are two reasons to not even try: first, I don't know where to turn and second, I get the feeling -so what, why should I care?

The presence of organisational defensive routines in the vision system was less obvious. However, the results show that some respondents hold the view that there has been some resistance to participate in the implementation process of the vision, and there are respondents that do not have knowledge of or cannot identify themselves with the vision, which actually are examples of *denial and hiding*. A quotation will be repeated as an example of this.

- R9 ...we were on a kick-off with the department, one or two days and we were supposed to sit in groups... (later) ... and discuss this, how we relate to this and nothing happened. Everybody just said "let's have some fun instead" ... (later) ... there was complete consensus that this was rubbish. Why should we sit and relate to this? It's just like bla, bla, bla... Among teachers, they just felt - forget it! There was no respect for this work at all. "we don't want to relate to this, we don't even know where the vision comes from.

Finally then, organisational defensive routines were identified in the grouping system as well. They are present in the power grouping, and are expressed by *watching one another's backs*, which means defending interests and the members of the grouping, according to interview respondents. An example of this was:

- R3 You become very important when you get power and it's all about watching one another's backs.

To sum up, the university contain one organisational characteristic, organisational defensive routines, that is shared by all subsystems. Since this organisational characteristic does not meet the requirements in the theoretical model and exist in all subsystems, the subsystems have a reinforcing link to one another which reinforces the presence of the organisational defensive routines within the organisation. This reinforcing feedback loop between the subsystems balances the university's ability to meet the requirements in and function in accordance with the theoretical model of a learning organisation.

Result Summary & Conclusions

Three sources have been used to analyse and conclude in what way the organisational characteristics of Karlstad University interact to support or hinder learning within the organisation. One source is based on the results of the factor analysis. Another source is based on the conclusions of the subsystems, based on the analyses of the documents, interviews and the survey. The final source is based on a re-analysis of the empirical data in each subsystem.

The results of the factor analysis revealed that the norm system is related to all subsystems as it referred to the ethos as well as the accountability component within the organisation. From a system theory point of view, this indicates that the norm system has the largest influence on the other subsystems. The results of the second analysis reveal that five out of six subsystems are related by reinforcing links, and interact by reinforcing feedback loops that together balance the university's pre-requisites to function as the learning organisation. However, the results of the second analysis also indicate that the grouping system has a balancing link in relation to the other subsystems, and thereby has the greatest potential to function as a lever to influence the entire system into another direction. However, the strength of the reinforcing feedback loops in the other subsystems can be assumed to balance the grouping system's mitigating effect. The results of the third analysis showed that all subsystems contain an organisational characteristic that do not meet the requirements of the theoretical model of the learning organisation. Therefore, the subsystems are inter-related by a reinforcing feedback loop which balances the university's capacity to function as a learning organisation. Like the results of the first system analysis, the third

analysis indicated that the norm system may have the greatest potential to influence the entire system.

To conclude, the university's pre-requisites to meet the requirements of the theoretical model and function as a learning organisation is hindered by reinforcing feedback loops between most (five out of six) or all subsystems. The norm as well as the grouping system seems to have the greatest potential to influence on the other subsystems and may therefore be used as leverage for improving the university's learning capacity.

Chapter 4

Summary & Discussion

There are voices in the research field suggesting that universities should become learning organisations in order to survive and become competitive in a complex environment. Two research aims have been raised. The first was concerned with in what way the organisational qualities of a university match the characteristics of a theoretical model of a learning organisation. The second was regarding in what way the organisational characteristics interact with one another in order to find out whether they support or hinder organisational learning. The selected case, Karlstad University, had an explicit vision to become a learning organisation.

An integrated theoretical model of a learning organisation was created, based on different perspectives. The university was divided into six subsystems (vision, grouping, communication, norm, sanctions and evaluation system) and method triangulation has been applied, based on interviews, documents and a survey. Data analysis has been focused on the identification of organisational characteristics of the case, in relation to the theoretical model. Furthermore, explorative factor analysis as well as system theory analyses has been applied.

The results show that out of six subsystems, four (communication, norm, sanctions and evaluation system) do not meet the characteristics in the theoretical model of a learning organisation. One subsystem (vision system) turned out to meet, as well as not to meet, the requirements in the theoretical model, while one - the grouping system - matches the requirements. The conclusion has been drawn that the university's inner life is not in harmony with the characteristics of the theoretical model of a learning organisation.

The results of the first system theory analysis was based on the results of the factor analysis and showed that there are reinforcing links within two groups of subsystems, and that the norm system is the only subsystem that has such links to all the other subsystems. The results of the second system theory analysis show that five out of six subsystems interact by reinforcing feedback loop, which hinder the university's ability to function as a learning organization. One subsystem turned out to have a balancing link to the other five subsystems. However, the subsystem's balancing effect on the other subsystems is mitigated by the strength of the reinforcing feedback loop between them. The results of the third system theoretic analysis revealed that all subsystems have one organisational characteristic, which do not meet the requirements in the theoretical model, in common. This result indicates that all subsystems have a reinforcing link to one another and together they balances the university's ability to meet the requirements in the theoretical model. While the first and third analysis indicated that the norm system may have the greatest potential to influence the other subsystems and thereby the entire organisation, the second analysis indicated that the grouping system may have such potential. Therefore, the norm as well as grouping system has been concluded to be important points of leverage in order to improve the university's pre-requisites to function as a learning organisation.

Discussion of Results

Research Results in Relation to the First Research Aim

The first research aim in this study was concerned with in what way the university matches the characteristics of a theoretical model of a learning organisation. The theoretical model used in the study relies on an open system assumption, i. e. such an organisation influences, as well as is influenced, by the environment. Even though Karlstad University interacts with society, the results of the evaluation system show that the university does not systematically gather information about its environment. This indicates an ignorance of feedback that might be of importance and might influence the university. Furthermore, the results of the evaluation system show the university has a lack of systematic

routines for data gathering about internal processes, and there is an absence of qualitative data gathering, which indicates an ignorance of feedback internally as well.

The open system perspective indicates that a learning organisation applies system thinking in problem-solving processes. However, the results of the evaluation system reveal the university has a lack of systematic data processing, difficulties to examine underlying structures of problems, lack of pro-active problem identification and repeated problem-solving, which indicates Karlstad University does not apply system thinking in problem-solving processes. Furthermore, the results show that the university does not systematically evaluate actions taken and there is a lack of systematic improvement of problem-solving routines, which indicates ignorance of feedback regarding actions taken and difficulties to learn from experiences. Such results indicate that the university applies one-dimensional learning rather than two-dimensional learning such as second order/double loop/development oriented learning, or the mix of these learning strategies, which characterises learning organisations. A learning organisation uses a well-balanced mix of both learning qualities. The case study university appears to apply only one, therefore the university does not meet the requirements in the theoretical model. Instead, the results indicate that Karlstad University has more in common with traditional universities than with the characteristics of the theoretical model.

It is also characteristic of a learning organisation to have a learning culture that allows and encourages questioning, the production of and absorbance of new ideas, conflicts, risk-taking, mistakes and knowledge transfer. Within such an organisation there are supportive structures for these activities. The analyses of the norm system reveal that Karlstad University does not meet these requirements in the theoretical model. The culture of this university seems to be non-encouraging regarding most of these aspects, and there is also a lack of supportive structures as well. A learning culture, and supportive learning structures, is distinguished by a high degree of communication flow characterised by dialogue. The results of the communication system show that while quality of communication sometimes is distinguished by dialogue, sometimes there is an unclear quality in that communication. Results have also shown that the communication flow often is perceived as poor among organisational members and that organisational defensive routines block dialogue from bottom-up within the university. The organisational diffuseness and time pressure that the re-

spondents in the study experience together with a lack of natural meeting arenas hinder dialogue from taking place. The university has been designed in a highly differentiated and fragmented way, where the different parts have little contact with one another. The inner organisation of the studied case is thereby characterised by loosely coupled parts. This university seems therefore to struggle with the traditional problems of universities - the problem of integration.

A learning organisation is usually distinguished by a strong common vision, which emerges from organisational members, and with which they can identify themselves with. The insights into the vision system of the studied university show that there exists ambivalence in the formulation process of the vision and divergence in the identification with the vision. However, the content of the vision that the university works towards really does meet the characteristics of a learning organisation, which probably will be of importance for further future development. The supportive learning structures of the theoretical model are characterised by multi-disciplinary groupings, where a variety of organisational members can be included and where learning and knowledge transfer more easily can take place. The investigation at Karlstad university shows that the grouping system fulfils this criterion, although there is no particular empirical evidence that learning actually occurs. Furthermore, in a learning organisation one also expects to find a sanction system with criteria that are obvious to all organisational members, and which reward learning activities. In the studied case the sanction system shows no such obvious criteria and structures to its members, and activities that are directed towards risk-taking and learning are not rewarded. The lack of clear criteria and structures within the sanction system might contribute to understanding why the sanction system is linked to ethos aspects rather than to accountability ones in the factor analysis. As the criteria appear to be hidden for the university staff, the sanction system seems to be shaped on the same basis as the norm system.

The university that has been a case in this study proved to have no distinguishable learning culture and supportive learning structures. This university can be seen as an example of a less open system with a low amount of applied system thinking in its daily routines. The learning that takes place on the organisational level seems to mainly be one-dimensional learning, rather than a mix of two-dimensional learning that the literature points out as a characteristic trait of learning organisations.

Research Results in Relation to the Second Research Aim

The second research aim in this study was concerned with in what way the organisational characteristics interact with one another in order to find out whether they support or hinder organisational learning. The results of the system theory analyses showed that the subsystems are multi-interrelated with one another, even though some results differed in the analyses. The results based on the factor analysis showed that different indexes of the norm system fall into two different dimensions, but that the norm system thereby has relations with all subsystems. All these relations except one were positive, which indicates reinforcing links. The second analysis based on the conclusions of each subsystem showed that five out of six subsystems that do not meet the requirements (one meet as well as do not meet the requirement) has reinforcing links to one another, while one subsystem has a balancing link. The results of the third analysis showed that there is an organisational characteristic “organisational defensive routines” that does not meet the requirements in the theoretical model, which pervades all subsystems. This indicates that the subsystems are inter-related by a reinforcing link and feedback loop that reproduces as well as reinforces the presence of organisational defensive routines, which hinders the university’s ability to function as a learning organisation. Consequently, the results show that identified organisational characteristics in the different subsystems are operating in a reinforcing feedback loop, which together hinder the university to match the characteristics of the learning organisation.

As the common organisational characteristic pervades all subsystems, it is questionable if it can be referred to the ethos or to the accountability component within the organisation solely. Instead, the organisational characteristic may be related to both aspects. If so, the concepts of ethos and accountability transcend one another and share the same problems as the concepts of culture and informal structure. If the university is interested in becoming more of a learning organisation then simultaneous changes in the common organisational characteristics are assumed to influence in the ethos as well as the accountability component at the same time, and thereby the entire organisation in the most effective way.

How to Improve the University's Ability to Work as a Learning Organisation

As the results of the system theory analyses have shown, the university suffers from a self-locking structure, where reinforcing feedback loops between the subsystems block the university's abilities to function as a learning organisation. However, reinforcing feedback loops in themselves is not problematic; rather it is *what* they reinforce that produces problems. The presence of organisational defensive routines in all subsystems, reinforced by reinforcing feedback loops between them hinder the university's pre-requisites to meet the requirements of the theoretical model. In order to improve the university's preconditions to function as a learning organisation it appears to be important to keep the reinforcing feedback loops travelling between the subsystems, but it is also important to *change the characteristics of what they reinforce*.

Using system theory as a basis for changing the university to become more of a learning one, it therefore seems to be recommendable to stimulate changes in those subsystems that are assumed to influence the others in desired directions. As the norm system was shown to influence the other subsystems, and the grouping system had a balancing influence on the other subsystems, these two should be used as a lever to improve the university's prerequisites.

The norm system contains mental models such as organisational defensive routines, which might block learning. These mental models pervade all subsystems, and consequently, the entire organisation. Accordingly, these mental models need to change. Such changes are not easily carried out, since they cannot be ordered by the management, at least not from the cultural perspective and the theoretical model of a learning organisation applied in this study. Instead, if the management and key individuals at different organisational levels alter their mental models and behaviours, organisational members are likely to follow since the management and key individuals are norm setting for the organisation as a whole. Examples of key individuals can be Heads of Departments, teachers and researchers used as peers and individual representatives from all professions that are highly valued among the organisational members.

The number of groupings that transcends organisational boundaries and professions and organisational members' multi-memberships in groupings may be used as arenas for dialogue. In these arenas, mental models can be reviewed, knowledge created and transferred - in order to make the learning of individuals become collective. The groupings ought to focus on the underlying conflicts

that are present, and to use these conflicts as learning opportunities as well as starting points for improvement and development.

From a system theoretic perspective, such fundamental changes, all in all, can be assumed to positively influence the different subsystems as well as the entire organisation. To alter mental models could mean that problem-solving processes in the evaluation system would be positively influenced since the organisational defensive routines that hinder problem identification and data processing would die out. Such a change may influence the university's structures for problem-solving processes as well. The absence of organisational routines is also assumed to increase the possibilities to communicate within the organisation, quantitatively as well as qualitatively, which also would have a positive influence on formulation and implementation processes in the vision system too.

Karlstad University has possibilities to improve its prerequisites to function as a learning organisation. It has the ambition to work as one. This study points out some crucial facts about the way the inner life of the university influences this ambition. If life at the university continues in the same way as it has done until this study was made, the university risks remaining with its organisational defensive routines, that block the university's capacity to work in a learning manner. The challenge that the study points out is to overcome the organisational defensive routines, to change mental models, and to present conflicts as learning opportunities in the grouping system. I recommend the university to use the norm system as one lever for this change. The university may also check out its sanction system in order to remove hindrances for learning, to make it transparent for all organisational members and make the subsystem to harmonise with a learning culture.

Changing an organisation does not only mean changing the common organisational culture and structures. Of necessity, management strategy has to change as well, as the management has such a substantial influence on organisational members' mental models and behaviours. However, at the moment of writing, the management body seems to already have started to change managerial strategy, since the management body has invited all organisational members to face-to-face meetings in a dialogue around the ongoing restructuring process within the university. Furthermore, the management body has put all information about the process on the intra-net, and encourages organisational members to take part actively and engage in a dialogue about the ongoing processes. A

closer look at the new structures reveals that there are intentions to organise the means for increasing knowledge transfer and cooperation that cross both disciplinary and departmental boundaries. This means there is a willingness to change the structures for communication as well as quality of communication within the university which will, it is assumed, influence learning capacity positively. In other words, the management body has opened up the organisation for dialogue, and has also created meeting arenas for such dialogues. This is an important starting point for creating a culture for dialogue and learning. The reorganisation process has also included a reduced number of departments, from ten to four. This means that the constellations of disciplines have changed, which creates new conditions for cooperation between disciplines and new groupings. All in all, the university has started a process that appears to successfully increase its capacity to move forward towards a learning organisation.

The process would be supported by the appliance of system thinking in problem-solving and decision-making processes within the university. The principles in system thinking could be learned in the number of groupings at different organisational levels. Thereby, organisational members would develop a common language and a tool for learning how to learn as a group as well as at an organisational level. As might be noted that the application of system thinking tends ultimately to change mental models, i. e. culture, and structures - and if organisational members learn to understand how loosely coupled systems work from a system theory perspective, they can also learn to identify and remove hindrances to organisational learning.

Weaknesses & Strengths of the Theoretical Model

The constructed mixed theoretical model used in this study can be criticised for being as normative as the theories developed from management production systems. After all, the construction and use of theoretical concepts that are assumed to optimize learning within an organisation are difficult to view otherwise. The theoretical model constructed is a mixed-model, i. e. a combination of the theoretical framework of learning organisations developed from management production systems and some of the suggestions of the architecture of the academic learning institution that are put forward in the research literature. While the theoretical framework developed from management production systems can be referred to the market discourse in higher education, the compo-

ment of the academic learning institution architecture can be referred to the traditional discourse, as the organisational missions and the core tend to be intact. The choice of a mixed-model relies on the assumption that universities struggle under the tension of two competing discourses; the traditional cultivation of individuals and the market discourse, which are of importance to take into account when a university's adaptability is in focus. By applying theories tally with the market discourse, the understanding of the university's core would be ignored, a core that set the conditions for the university to transform into a learning organisation. By applying a theory that corresponds with the traditional discourse, some fundamental aspects in learning organisations will be neglected, and the question arises under such conditions if the university can fulfil the requirements to function as a learning organisation at all.

It is a fundamental characteristic for learning organisations that individual as well as groupings' learning becomes organisational, i. e. influences organisational culture as well as structures. Traditions, core and vision have to change in the university in order for it to function as a learning organisation. Therefore, these aspects cannot be neglected when defining the mixed-model of a learning organisation. However, the need for a changed core, missions and vision has to be balanced with the unique conditions in which universities exist. The crucial question might be how to balance these contradictive requirements within a university that aim to function as a learning organisation.

From a research point of view, it would have been easier to apply one model of the already existing theoretical and discourse perspectives. The study would not have been so time-consuming, and the construction of the interview guide as well as the survey can be assumed to be easier to concretize. However, by taking the competing discourses into account and constructing a mixed-model, considerations have been taken as to the complexity of the turbulent environment and to universities' struggle to adapt.

The theoretical model of a learning organisation includes conflicts. The presence of conflicts is not characteristic for learning organisations alone. Conflicts can be assumed to be present in all social systems and thereby in all organisations. Measuring the presence of conflicts might, from such a perspective, be unnecessary. However, the presence of conflicts is a prerequisite for learning, as conflicts signify a condition of in-equilibrium, i. e. a starting point and motivation to learn. The condition of in-equilibrium might result in two proc-

esses, balancing feedback that strives to restore equilibrium, or reinforcing feedback that strives to achieve a new equilibrium. How conflicts are dealt with is crucial in order to learn or not to learn. Within a learning organisation one uses conflicts as learning opportunities, to expand mental models. The measurement of the presence of conflicts means the identification of what underlying tensions that exist, which also means an identification of learning opportunities.

Validity and Reliability

The two identified dimensions in the factor analysis - ethos and accountability - explained 47 % of the variance of the total structure, which indicates that there is a need for further development and improvement of the measurement in order to identify factors that have more explanation power in relation to the variance of the identified dimension or that may identify several dimensions. Furthermore, it would be appropriate if the number of questions and hypothetical statements in the survey could be decreased. Using a more condensed questionnaire the response frequency might increase and it would be possible to measure more precisely with a smaller number of cases. As factor stability is dependent on the sample size and the number of cases per variables, it would be recommended to continue the development of the measurement instrument on a larger population. One possible way to increase the measurements accuracy is to reanalyse the factor matrix in the search for the identification of the variables with the highest factor loadings, which will be representative for a particular factor dimension. Another possible way is to replace the original set of variables with a new, smaller set of variables created from summated scales or factor scores, and then test it in a cluster analysis. A third way is to use the already existing variables in multidimensional scaling, and analyse how such results correspond with those from the factor analysis. Further improvement of the survey ought to be focused on the distinguishing of ethos and accountability aspects of the norm and sanction systems, in order to decrease any overlapping tendencies and to keep the clear factor loadings in each dimension.

The construction of the interview guide and interviews was performed quite early in the study, but the understanding and construction of the theoretical model of a learning organisation has been ongoing along with the study. This means that the questions in the interview guide covered main concepts of the

theoretical model, as it was constructed at that point. Such discrepancy risks influencing validity as well as reliability negatively. However, the main concepts remained during the development of the theoretical model, but a few were added along the way. Here, the critical incidents in the interviews have been of particular importance since most of them proved to cover remaining as well as added concepts in the theoretical model. Furthermore, document as well as survey analysis covers most main concepts of the theoretical model, and together can be assumed to form validity as well as reliability at a satisfying level.

The results of the system theory analyses reveal that the university's ability to function as a learning organisation is obstructed by reinforcing feedback loops between the subsystems. In one of the analyses the grouping system has a potential to influence the university's capacity to function as a learning organisation in a positive way. In two other analyses the norm system was revealed to have such potential. The differences between the analyses can be understood in different ways. First, the reason why the grouping system was not identified as a positive influence in the first system theoretic analysis might be an effect of the way the measures of groupings were made in the survey compared to the qualitative data analysis. While the latter identified groupings and their characteristics, the survey measured actual cooperation between different functions. Second, the identification of organisational defensive routines which indicates the norm system's influence on the entire system, relies on the results based on interview and document analysis as it was not really measured in the survey. The reliance on different data can be seen as an advantage as well as a disadvantage. The disadvantage is that identified characteristics have not been validated by all empirical data, while the advantage is that variances of characteristics and their influence on the university's ability to function as a learning organisation have been possible to identify. It would have been optimal to validate all identified organisational characteristics from the qualitative data analysis, but as the survey was already so extended all of them could not be included. Validation was therefore based on organisational characteristics that were judged as particularly evident in the qualitative data analysis only.

Contributions to the Research Field

In this study I have contemplated the university as a learning organisation. By combining two theoretical positions that are related to the tension between two competing discourses, it has been possible to develop a mixed-theoretical model of a learning organisation. This theoretical mixture has been tested empirically through an illuminative review of one university. Thereby, the study has contributed to the ongoing discussion in the research field, viewing universities as learning organisations. The illuminative review shows that the theoretical model of learning organisations is not easily applicable on a university organisation, not only because of the specific mission that a university has; i. e. to work on the traditional cultivation of individuals. University organisations differ from many other organisations by their size. They are large organisations where many hundreds and sometimes several thousands of employees work with thousands of students. The work is conducted within a rich number of organisational units. University organisations are fragmented by their size, the number of organisational units, subcultures and physical dispersion of buildings. The intra-variation in many of the variables that are important regarding the possibilities for the university to function as a learning organisation is therefore large. For instance, the results of this study showed that there is a broad spectrum in the norm system, which is also the reason why some organisational units seem to function more in accordance with a learning organisation than other units do. Furthermore, the results showed that the subsystems' match to the theoretical model differ, where one subsystem matches, one matches as well as does not match, and four does not match the characteristics of the learning organisation. Such results indicate that the theoretical model of learning organisations may not be appropriate on organisations of greater size that are highly sub-culturally fragmented. This raises the question how to integrate the existing subcultures into a common learning culture, and make it functioning parallel to the subcultures. However, this study does not give any suggestions in this matter.

The theoretical framework may be most useful when you study levels within a university organisation; for example the department level or the disciplinary level, rather than the full university organisational level. In order to study a large university organisation from a learning organisation point of view, the concepts of organisation and learning organisation may have to be developed, as well as their theoretical basis. In the end, the main question may be; can organisations

of a university's size really function as learning organisations, or is this unrealistic?

The application of system theory as an analytical tool has contributed to an understanding of how and why a university's capability to work as a learning organisation has its particular appearance. In the best case, such understanding might provide ideas that result in improvements of a university's culture as well as informal structures in order to increase its learning capacity. In this study, the norm and grouping systems have shown to have the largest potential to improve the university's capacity to function as a learning organisation. The problems to distinguish between organisational culture and informal structures in the study have raised the question of how to separate the concepts from one another in order to improve the necessary measurement. The study has furthermore shed some light on the problems to distinguish subsystems from one another.

In contrast to many other studies on university organisations adaptability, this study has included the academic professions as well as the non academic professions that comprise universities. There are no professions that might or ought to be excluded in these kinds of studies, since they all form part of the organisation, and the links between the professions are crucial for learning processes in a learning organisation.

Recommendations for Further Research and Development

This study has empirically illuminated a case and its ability to match a theoretical model of a learning organisation. However, there is a need for increased empirically based research on learning organisations in general, and on universities as learning organisations in particular. Such research should aim at testing different theoretical assumptions and to develop the theory of learning organisations that is applicable for universities' specific conditions. This requires access to empirical richness and objects that can be compared with one another. Since the number of universities is limited in Sweden, there is a need for international research cooperation.

As mentioned earlier, Swedish research into university organisations has decreased since the middle of the 1980s. Despite the existence of an organisation, the Swedish Institute for Studies in Education and Research (SISTER),

which is responsible for the organisation, integration of and knowledge transfer on research in higher education in Sweden, we do not appear to function in the same dimension as our neighbours. For example, Higher Education Development Association (HEDDA) in Norway, Finnish Network for Higher Education Research and Training (FINHERT) in Finland and Center for Higher Education Policy Studies (CHEPS) in the Netherlands have multi-disciplinary centres for research into higher education systems and their organisations. Together they have developed research collaboration and created masters' programmes as well as Ph. D. courses bringing together students from all over the world. Participation in such a research environment of this calibre would unquestionably have a positive and beneficial impact on Swedish research into higher education. To create a research environment such as this in Sweden however, the Swedish government together with the Swedish Research Council must invest in creating an organisation for the sole purpose of attracting and funding Ph. D. students in the target research field, to fund supervisors and international research fellows, to enable participation in international conferences and networks, and finally, to enable research projects. There is a need for systematic investments at a higher system level in order to stimulate the creation of research environments that will be capable of competing at an international level.

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Interview Guide

Appendix 1

The Norm System

How does a successful employee behave within the university?

How are new ideas met within the university? Does the university use the staff's ideas?

How are conflicts dealt with within the university? Are they dealt with, and if so, in what way?

How is the atmosphere towards failure within the university? How is it expressed?

Do you talk about your failures with your colleagues? How, and if not, why not?

How is the atmosphere for criticizing a) colleagues, b) the organisation? Do you do that? How is the criticism met?

Do you give and get feedback on your work a) in your work group, b) in your department?

How is the atmosphere for experimenting in work within the university?

What are the obstacles and possibilities for change within the university?

How is resistance to change dealt with within the organisation?

The Sanction System

How are the staff rewarded at the university?

What kind of behaviours is rewarded?

How are the staff sanctioned at the university?

What kinds of behaviours are punished?

The Vision System

What are the visions of the university?

Are these visions in accordance with your visions? What are your visions?

Can you identify yourself with the university's visions? How, if not, why not?

The Evaluation System

Are there any formal routines to identify and solve problems within the university?

Examples?

Are there any informal routines to identify or solve problems within the university?

Examples?

How are problems within the university identified, by whom? Can you identify problems and make the management pay attention to them?

What kind of problems do you identify within the organisation? What have you done to make the management aware of this?

Does the university systematically gather information about its internal processes? If so, what processes?

Does the university systematically evaluate information before decision-making?

How do you view the organisation's problem-solving ability? Effective, ineffective?

Motivate!

The Communication System

Do you know where to turn within the organisation in order to get relevant information/ is the organisational structure obvious to you?

Do you communicate with a) your colleagues, b) other disciplines, c) other departments, d) management - and if so what kind of communication, about what?

Do you get feedback on your work from a) colleagues, b) departmental management, c) management?

The Grouping System

Are you working alone or in a team? Together with whom?

How do you get access to different kinds of groupings?

Survey to personell working at Karlstad University

This survey is a part of my dissertation work in the Science of Education. It is directed to those working at the University of Karlstad. The aim of the study is to establish to what extent an academic organisation can function as a learning organisation. The University of Karlstad is used as an example of such an organisation. The study is one of a kind as no other studies have been carried out with the same focus i.e. to contemplate an academic organisation as a learning organisation.

The organisation of the university has been divided into six subsystems to identify different aspects of organisational learning. The survey is composed on the basis of theories about learning organisations but also grounded on interviews that I have conducted with a sample of employees at the university and some of the documents that have been written about/by the university. The survey takes about half an hour to answer. Your views on the way the university organisation works are valuable in order for me to describe and understand how it works from the chosen perspective, so that new knowledge can be generated.

The survey has been discussed with the managerial group at the university. Your answers are given anonymously and are treated with confidentiality, so that you can feel safe to express your views. I want to underline that there is absolutely no interest in identifying individual persons, but your work function and your working place are important information that is needed to make linkages between different parts of the organisation, which is crucial to make in this kind of study. To be able to compute data within the limits of the study I ask you to please return your answers to me before the 5th of November.

Kind regards,

Ingela Portfelt

Doctorial student, Educational Science

INOVA, level 5

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Background questions

- 1) *I am* ☐ Woman ☐ Man
- 2) *I am employed as*
- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| <input type="checkbox"/> Administrator/technician/engineer/economist | <input type="checkbox"/> Project employed |
| <input type="checkbox"/> As a teacher and researcher (lecturer, research fellow, professor) | <input type="checkbox"/> As a full time researcher |
| <input type="checkbox"/> As a full time teacher (lecturer or assistant lecturer) | <input type="checkbox"/> Doctorial student |
| <input type="checkbox"/> Administrator with a managerial function at the department
(Head of Department, Vice Head of Department, Director of Studies) | <input type="checkbox"/> Other, please describe;

_____ |
- 3) *My main work place is at the department of*
- | | | |
|------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Social science | <input type="checkbox"/> Health and care | <input type="checkbox"/> Economy |
| <input type="checkbox"/> Information technology | <input type="checkbox"/> Chemistry | <input type="checkbox"/> Nature and Environment |
| <input type="checkbox"/> Science of engineering, physics & mathematics | <input type="checkbox"/> Culture & Communication | |
- 4) *I have earlier been working at (more than one alternative is possible)*
- ☐ Another university ☐ Business life ☐ Public service ☐ County level ☐ Municipality level
- ☐ Other, please describe;

- 5) *How long have you been working at Karlstad universitet?*
- ☐ I was appointed before the university college became a university (*If yes, do not answer question 6*)
- ☐ I was appointed before the university college became a university
- 6) *The development of the university college to a university has resulted in a strong expansion. This might influence the way in which employees of the university identify their work and themselves in the organisation. Please rank in order what organisational part you identify with most in your daily life. Use 1 for the unit that you identify most strongly with, 2 for the next and 3 for the part of the organisation that you identify less strongly with.*
- Before the university was established I identified myself most strongly with ☐ the university college ☐ my department ☐ my discipline
- After the university was established I identified myself most strongly with ☐ the university college ☐ my department ☐ my discipline
-

The University's Norm System

All organisations have norms that might influence the values and behaviours of the employees when they learn. Here are some scenarios that describe the norms of Karlstad University, which try to capture the atmosphere that the employees might experience. Please, cross the box that best matches your understanding in each statement.

7) You have developed some sort of solution in your work, that you believe others working within the same area could gain from. Which routines exist to disseminate your knowledge within

A) ... your discipline?	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
Development work is presented in a written report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Development work is presented orally during meetings within the discipline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Development work is presented during seminars that are held within the discipline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My discipline does not have any routines for the dissemination of development work that occurs within its limits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, please describe; _____					

B) ... your department?	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
Development work is presented in a written report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Development work is presented orally during meetings within the department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Development work is presented during seminars that are organised by the department management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The department does not have any routines for the dissemination of development work that occurs within its limits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, please describe; _____					

8) You have an idea about how you could develop something new in your work, but to realise the idea you need to cooperate with other subject areas and people within the department. How do you find that such cooperation works at your department? (Please mark the alternative that you find fits in best for all the descriptions given below)

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
Colleagues within your discipline are very open and constructive when you try to develop something new together with other disciplines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The department management is very open and constructive when you try to develop something new between disciplines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Colleagues within other disciplines works against development of something new between disciplines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The department management works against development of something new between disciplines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, please describe; _____					

9) Imagine that a discipline within the X department has experimented with and developed a new way of teaching that achieves good results. The teachers of this discipline believe that this way of teaching also would suit other disciplines and departments. Which routines for dissemination between different parts of the organisation do you experience at the university ?

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
Development work is presented in a written report that is distributed to all employees at the university	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Development work is presented at seminars that are arranged by some central parts of the university	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Development work is presented during staff meetings of other departments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The university does not have any routines for the dissemination of development work that appears within the organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, please describe; _____					

10) You have an idea about how something within the university could be developed? How is your idea met ...

A)... among the colleagues within your discipline	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
The colleagues are enthusiastic about your idea. They want to realise/implement it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The colleagues support you to work further with your idea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The colleagues seem to be enthusiastic, but in reality they do not care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The colleagues do not listen to your idea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The colleagues work against new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, please describe; _____					

B)... at the department where you work	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
The department management is enthusiastic about your idea, and wants to realise/implement it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The department management supports you to work further with your idea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The department management seems to be enthusiastic, but really does not care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The department management do not listen to your idea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The department management works against new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, please describe; _____					

<i>C). by the managerial body of the university</i>	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
The managerial body of the university is enthusiastic about your idea and wants to realise/implement it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The managerial body of the university supports you to work further with your idea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The managerial body of the university seems to be enthusiastic, but in reality does not care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The managerial body of the university does not listen to your idea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The managerial body of the university works against new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, please describe; _____					

11) You have received developmental funds at Karlstad University to develop and realise an idea you have, which you think can improve the university organisation. Unfortunately the project does not develop as well as you wished. You begin to realise that the financial funding and the time the project has been allocated will not result in the production of knowledge that was expected. In short, your project has failed. How is this received?

<i>A) ...among the closest disciplinary colleagues</i>	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
Your colleagues regard it as a good opportunity to learn from your mistake and would like to discuss the project with you. They try to contribute with ideas about why and how the project went wrong and how one could act instead.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nevertheless, your colleagues regard the result as positive, since it produced new knowledge – yet it was something other than the expected result.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your colleagues regard your project as a failure where funds have been wasted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your colleagues don't talk with you about your project, and you feel that you have made an unforgivable mistake.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, namely; _____					

<i>B) ... at your department ;</i>	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
The department management regards it as a good opportunity to learn from your mistake and would like to discuss the project with you. They try to contribute with ideas about why and how the project went wrong and how one could act instead.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nevertheless, department management regards the result as positive, since it produced new knowledge – yet it was something other than the expected result.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The department management regards your project as a failure where funds have been wasted.					
The department management doesn't talk with you about your project, and you feel that you have made an unforgivable mistake.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, namely; _____					

<i>C) at the university management (the rector's group);</i>	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
The university management regards it as a good opportunity to learn from your mistake and would like to discuss the project with you. They try to contribute with ideas about why and how the project went wrong and how one could act instead.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nevertheless, the university management regards the result as positive, since it produced new knowledge – yet it was something other than the expected result.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The university management regards your project as a failure where funds have been wasted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The university management doesn't talk with you about your project, and you feel that you have done an unforgivable mistake.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, namely; _____					

12) Suppose that university management proposes a new organisational routine, which it expects that you as an employee will follow. You think that the idea is bad and it will worsen the quality and efficiency in your work. You have viewpoints regarding the procedure, and you criticise in all ways the new routine during the decision-making process. In what way will the organisation meet your criticism?

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
My colleagues will listen to my criticism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My department management will listen to my criticism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The university body (the rector's group) listen to criticism from an employee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It feels as if one must not criticise the organisation or its routines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, namely; _____					

13) Within organisations contradictions between different groupings usually appear. The statements below deal with the question whether you apprehend that there exist contradictions between different groupings' interests at Karlstad university.

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
Contradictions exist between:					
A) Faithful old servants (with many employment years) and recently employed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B) Academics and administrators/technicians	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C) Humanistic faculty and Scientific faculty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D) Between different departments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E) Between different disciplines in the same department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F) Employees from the university contra employees recruited from industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G) Employees and the board of the university	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H) Between faculty and departments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I) Between the university management body (rector's group) and the faculty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J) I do not experience any contradictions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, namely; _____					

14) If you experience contradictions, what are your understanding of different groups and their interests? If you don't experience any contradictions, go to question no 15.

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
Contradictions between groups are positive since they lay the ground for development and learning within different parts of the university	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contradictions between groups are a reality and can at best result in a developing and learning dialogue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contradictions between groups are uncomfortable, but one should try to reach satisfactory compromises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contradictions between groups are ineffective and should be avoided.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, namely; _____					

15) How do you understand that others perceive contradictions between groups?

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
Contradictions between groups are positive since they are the basis for development and learning within the university's different parts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contradictions between groups are a reality and can at best result in a developmental and learning dialogue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contradictions between groups are unpleasant, but one ought to find satisfactory compromises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contradictions between groups are ineffective and ought to be avoided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others, namely; _____					

The University's Sanction System

All organisations have a system of sanctions that reinforces norms. The sanction system contributes to the understanding of what actions that are desirable or not desirable in the organisation. The sanction system can thereby reinforce or weaken existing norms that regard learning in the organisation. Below a number of possible scenarios are described. Kindly put a cross in the box that corresponds with your understanding, i. e. how you understand rewards and punishments in the organisation.

16) You have in a successful manner developed an idea that you have realised, and that now is a part of the daily life of the organisation. How are you rewarded?

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
I get a rise in salary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get promoted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get appreciation in the form of encouraging words	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get a conference trip	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get more duties and assignments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not get rewarded in any particular way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others, namely; _____					

17) You have developed a close collaboration with some people in a different discipline and in a different department. How are you rewarded?

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
I get a rise in salary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get promoted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get appreciation in the form of encouraging words	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get a conference trip	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get more duties and assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not get rewarded in any particular way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others, namely;					

18). You have on your own initiative and hard work established contacts in industry. These contacts have resulted in your department have been able to increase its commissioned education considerably. Besides which the department has been able to employ two new staff members. How are you rewarded?

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
I get a rise in salary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get promoted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get appreciation in the form of encouraging words	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get a conference trip	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get more duties and assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not get rewarded in any particular way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others, namely;					

19). Britta is a Head of Department and has not followed the university's policy regarding purchasing computers to her department. This has caused negative headlines in the local newspaper. What will happen to Britta in the organisation?

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
Britta will be degraded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Britta gets a deduction from her salary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Britta will in the future be disregarded in different kinds of situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It will not happen anything particular to Britta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others, namely;					

20). Börje is one of the teaching staff, and it is revealed that he has reported overtime which he in fact has not done. This means that Börje gets overtime pay for work that he has not carried out, and it involves a five-figure amount. What happens to Börje?

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
Börje will be degraded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Börje gets a deduction from his salary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Börje will in the future be disregarded in different kinds of situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It will not happen anything particular to Börje	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others, namely; _____					

The University's Vision System

Most university organisations have visions, that also include Karlstad University. The ways visions are created and formulated affect the values and actions of the staff. The vision also affects the capacity of the organisation to strive in one direction. The staff's participation in the formulation and identification of the organisation's vision affects the learning of the organisation. Please cross the box that best matches your understanding in each statement.

21) A classic problem in organisational change concerns the balance between on the one hand initiating and steering change from the top, from the management body, and on the other hand to empower the employees. Specify how you understand the "point of balance" regarding the vision-work of the university. Kindly put a cross in the box that corresponds with your understanding for each statement. Observe that the vision that is referred to here, is the one that was formulated in the year 2000 (Vision 2000) and which is the current one for the university. Therefore ignore the process that now is on-going in formulating a new vision.

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
The vision is a result of a dialogue between the management body and the staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have actively contributed to the formulation of the vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The vision was formulated by representatives from the staff together with the management body	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The vision was formulated by the management body alone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The vision was formulated by the staff alone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other alternative; _____

22) Below, a number of statements are given. Please cross the box that best matches your understanding for each statement.

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
I can link my work to the contents of the vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I share the values in the contents of the vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The contents of the vision are too generally formulated, i. e. they include too much in order to mean something for me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe that KAU can realise the vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In my work, I strive to realise KAU's vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The University's Evaluation System

The scenarios and statements below are about the university's evaluation system, i. e. the organisation's problemsolving ability, which is linked to its learning capacity. For this reason, you should consider the entire organisation when you fill in the alternatives below, instead of your own department or discipline. In other words, consider what you think characterises KAU's problem solving ability. Please cross the box that best matches your understanding for each statement.

23) KAU get red numbers in their budget. How does KAU as an organisation deal with the problem?

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
KAU systematically gathers information about the problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU tries to identify the causes to the problem by systematically processing gathered information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU values the information before making a decision about how to solve the problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU creates new routines and structures in order to prevent that the same problem emerging repeatedly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU checks that the problem is really solved, i. e. evaluates their decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other alternative; _____

24) KAU identifies that the number of long-term illness increases. How does KAU as an organisation deal with the problem?

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
KAU gathers systematically information about illness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU tries to identify the causes for increased illness by systematically processing gathered information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU values processed information before making a decision about how to decrease the numbers of staff on sick leave.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU creates new routines and structures in order to decrease the number of staff on sick, and to prevent that other staff become ill.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU checks that illness really has decreased as a result of decisions, i. e. evaluates the decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other alternative; _____

25) Below, there are a number of statements about KAU's problemsolving ability. Please cross the box you think best matches your understanding in each statement.

	I totally agree	I largely agree	I agree to a certain degree	I do not agree	I do not know
KAU annually gathers information about how the organisation works	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU annually gathers information about how quality work is functioning within the organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU ignores old problems because new ones emerge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The same, or similar, problems can be identified at different organisational levels within KAU	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU learns by its experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The same problem tends to keep returning within KAU	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The management denies that certain problems exist within the organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU's problemsolving ability is high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU has routines that are followed in order to make sure that problems are really solved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KAU continuously improves its routines in order to increase the problemsolving ability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The University's Communication System

In order to function effectively and to learn from different parts of the organisation, all organisational units have to communicate with one another. However, communication can be characterised by different qualities, such as monologue, discussions and dialogue. Monologue is characterised by information, i. e. the transfer of facts. Discussions are characterised by the kind of argumentation that moves an issue forward, but where one of the including parts "wins". Dialogue is characterised by the kind of argumentation that is aiming towards the understanding of each other's perspectives, and where all included parts win. Below, there are a number of statements about KAU's communication system. Please cross the box that best matches your understanding in each statement.

26) What quality of communication do you think characterises the following units within the university;	Monologue	Discussion	Dialogue	No Communication
Between the management body and departments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Between the management body and Head of Departments/bosses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Between you and your closest boss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Between staff and management body	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Between my department and other departments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Within my department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Between my discipline and other disciplines in my department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Between my discipline and other disciplines of other departments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Within my discipline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27) Which parts of the organisation do you communicate with, and what quality of communication is characteristic?

	Monologue	Discussion	Dialogue	NoCommunication
The Board of the University	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Management Body	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Board of the department and undergraduate board	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Central Service Units	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Faculty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other departments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My discipline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other disciplines in my department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28) How often do you communicate in your work with other disciplines on different departments?

	Daily	A couple of times per week	A couple of times a month	Seldom/never
Science of Education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social Sciences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health Caring Sciences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business & Economics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chemistry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Culture & Communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental Sciences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Music College of Ingesund	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Engineering, physics & mathematics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The University's Grouping System

Social groupings emerge in all organisations as a result of individuals' need of belonging, but also in order to do a good job, to cooperate. The links between different professions/functions within an organisation are important pre-requisites for knowledge transfer and learning between groupings.

29) *How often do you cooperate with the groupings within KAU, mentioned below?*

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>A) Secretaries</p> <p><input type="checkbox"/> Daily
 <input type="checkbox"/> A couple of times a week
 <input type="checkbox"/> A couple of times a month
 <input type="checkbox"/> Seldom/never</p> | <p>B) Technicians</p> <p><input type="checkbox"/> Daily
 <input type="checkbox"/> A couple of times a week
 <input type="checkbox"/> A couple of times a month
 <input type="checkbox"/> Seldom/never</p> |
| <p>C) Teachers</p> <p><input type="checkbox"/> Daily
 <input type="checkbox"/> A couple of times a week
 <input type="checkbox"/> A couple of times a month
 <input type="checkbox"/> Seldom/never</p> | <p>D) Ph. D. Students</p> <p><input type="checkbox"/> Daily
 <input type="checkbox"/> A couple of times a week
 <input type="checkbox"/> A couple of times a month
 <input type="checkbox"/> Seldom/never</p> |
| <p>E) Researchers</p> <p><input type="checkbox"/> Daily
 <input type="checkbox"/> A couple of times a week
 <input type="checkbox"/> A couple of times a month
 <input type="checkbox"/> Seldom/never</p> | <p>F) Bosses/Heads of Departments</p> <p><input type="checkbox"/> Daily
 <input type="checkbox"/> A couple of times a week
 <input type="checkbox"/> A couple of times a month
 <input type="checkbox"/> Seldom/never</p> |
| <p>G) Committees</p> <p><input type="checkbox"/> Daily
 <input type="checkbox"/> A couple of times a week
 <input type="checkbox"/> A couple of times a month
 <input type="checkbox"/> Seldom/never</p> | <p>H) Boards of Departments</p> <p><input type="checkbox"/> Daily
 <input type="checkbox"/> A couple of times a week
 <input type="checkbox"/> A couple of times a month
 <input type="checkbox"/> Seldom/never</p> |
| <p>I) The Management Group</p> <p><input type="checkbox"/> Daily
 <input type="checkbox"/> A couple of times a week
 <input type="checkbox"/> A couple of times a month
 <input type="checkbox"/> Seldom/never</p> | <p>J) Central Service Units (economy, personnel etc)</p> <p><input type="checkbox"/> Daily
 <input type="checkbox"/> A couple of times a week
 <input type="checkbox"/> A couple of times a month
 <input type="checkbox"/> Seldom/never</p> |
| <p>K) The University Board</p> <p><input type="checkbox"/> Daily
 <input type="checkbox"/> A couple of times a week
 <input type="checkbox"/> A couple of times a month
 <input type="checkbox"/> Seldom/never</p> | |

Thank you for your participation!

The table below illustrates the use of quotations from each respondent in each subsystem. However, the use of quotations differs between the respondents as well as between the subsystems. For example, while respondent No 1, 3 and 15 are quoted in each subsystem, No 1 eleven times and No 3 fourteen times, and No 15 nine times totally, respondents No 8 and 12 have only been quoted four times each, in two and four subsystems respectively. One explanation to the skewness is that the latter respondents expressed themselves briefly and sometimes more imprecisely, and frequent use of these quotations risked the inter-subjectivity, i. e. possible difficulties for the reader to follow and understand my interpretations. However, these respondents had similar perceptions to other respondents, so they represent the same cultural as well as structural aspects as other respondents.

Table. Frequency of quotations from each interview respondent in the results in each subsystem as well as in total. V= Vision system, G= Grouping system, C= Communication system, N= Norm system, S= Sanction system, E= Evaluation system

	V	G	C	N	S	E	Total
Respondent							
1	1	1	2	5	1	1	11
2	1	1	1	2	1	-	6
3	1	4	2	5	1	1	14
4	1	1	2	4	1	-	9
5	-	-	-	3	3	1	7
6	-	2	1	3	2	-	8
7	-	1	2	2	-	-	5
8	-	-	-	3	-	1	4
9	2	1	-	3	-	-	6
10	-	1	-	2	-	2	5
11	2	-	4	-	-	2	8
12	1	-	1	1	-	1	4
13	1	1	-	3	-	-	5
14	2	1	1	1	1	-	6
15	1	2	1	2	1	2	9
Total	13	16	17	39	11	11	

Index Construction

Index 1 - The Norm System- Absorbing new ideas

This index was created by variables in the norm system that measured the university's ability to absorb new ideas; 8:3, 8:4, 10A:3, 10A:4, 10A:5, 10B:3, 10B:4, 10B:5, 10C:3, 10C:4, 10C:5, 12:4. Alpha value: .82

Index 2 - The Norm System - Transferring Knowledge

This index was created by variables in the norm system that measured the university's culture and structures for transferring knowledge; 7A:3, 7A:4, 7B:1, 7B:2, 7B:3, 7B:4, 9:1, 9:2, 9:3. Alpha value: .66

Index 3 - The Norm System - Experimenting and Mistakes

This index was created by variables in the norm system that measured the allowance of experimenting and making mistakes within the university; 11A:2, 11B:1, 11B:2, 11B:3, 11B:4, 11C:1, 11C:2, 11C:3, 11C:4. Alpha value: .73

Index 4 - The Norm System - Conflicts

This index was created by variables in the norm system that measured the presence of conflicts between different groups within the university; 13A, 13B, 13C, 13D, 13E, 13F, 13G, 13H, 13I. Alpha value: .69

Index 5 - The Sanction System

This index was created by variables in the sanction system, that measured the clarity/vagueness in the sanction system; 16:1, 16:2, 16:4, 17:1, 17:2, 17:3, 17:4, 17:5, 18:1, 18:2, 18:3, 18:4, 18:5, 19:1, 19:2, 19:3, 20:1, 20:2, 20:3. Alpha value: .84

Index 6 - The Vision System

This index was created by variables in the vision system that measured how the vision was created and the identification with the vision; 21:1, 21:2, 21:3, 21:4, 22:1, 22:2, 22:4. Alpha value: .64

Index 7 - The Evaluation System

This index was created by variables in the evaluation system that measured the university's ability to systematically gather, process and evaluate data in the problem solving process, i. e. the ability to identify and understand feedback, learning from experience; 23:1, 23:2,

23:3, 23:4, 23:5, 24:1, 24:2, 24:3, 24:4, 24:5, 25:1, 25:2, 25:5, 25:8, 25:9, 25:10. Alpha value: .85

Index 8 - Communication System - Quality and Quantity of communication between different parts of the organization. This index was created by variables in the communication system that measured the quality- and the quantity of communication between different parts of the university; 27:1, 27:2, 27:3, 27:4, 27:5, 27:6, 27:7, 27:8, 27:9. Alpha value (standardized): .66

Index 9 - The Grouping System

This index was created by the use of all variables, 29A, 29B, 29C, 29D, 29E, 29F, 29G, 29H, 29I, 29J, 29 K, in the grouping system that measured the contact and cooperation between different professions and levels within the university. Alpha value: .76

The University; A Learning Organization?

There are voices in the research field suggesting that universities should become learning organisations in order to be more competitive and efficient. However, the proposal is mainly based on theoretical and normative discussions rather than on empirical research. Therefore, this study has explored and reviewed in what way a university organisation has organised its inner life and illuminate in what way its local organisation matches the characteristics of a constructed theoretical model of a learning organisation. The study has furthermore explored in what way the organisational characteristics interact with one another in order to find out whether they support or hinder organisational learning.