Chapter 1

Introduction

1.1 Introduction

Technology, and information technology in particular, is a means used to broaden natural abilities, shape the environment, and promote cultural and spiritual aspirations.

Over recent years, we have witnessed significant technological developments in the field of communication, and of information sorting, analysis and transfer. We have witnessed attempts to integrate the use of computers in the educational environment, while technology has been constantly changing. The school environment has gradually been exposed to rapidly growing innovations in the field of information technology: computers, the Internet, different communication tools (e-mail, forum, content management system), multimedia, etc. The encounter between information technology (IT) and education has led to many fascinating directions in research.

Modern education has in general adopted a functional approach, in placing an emphasis on technological innovation. Technological innovations are perceived as a means to improve and enhancing the efficiency of existing pedagogical approaches and methods.

Lately, we have been able to observe a sharp increase in activities on the Internet in schools. Innovations in communication technology have contributed to the development of new software which has led to the creation of school websites (E-schooling). School websites form part of the ***E-culture***, which consists of ***E-learning***, ***E-teaching***, and ***E-schooling***, broadening the

pedagogical-organizational infrastructure of schools. This promises to be fertile ground for cultural research and new applications for information technology in the educational environment. Perceiving education as a medium for imparting culture and for the acquisition of desired knowledge and essential skills, E-schooling reflects not only pedagogical characteristics, but also cultural and social aspects. These serve as windows of culture through which we may catch a glimpse of contemporary culture.

This research explores ORT school websites in Israel in order to determine whether and how cultural dimensions are reflected in this medium. For this purpose, this study applies Hofstede's (1991) classification of cultural characteristics, which he organized into five cultural dimensions, as well as Marcus' (2001) elements of design to the analysis of the ORT school websites.

1.2 Aim of research

The web has become a powerful tool in education. Much has been written on the overt impact of the Internet on the curriculum, but what is the role of the Internet in the transmission of culture? Websites contain embedded cultural values and objectives. These are often determined by group and organizational cultures, such as educational organizations, structures and incentives that affect the content and design of school websites. Some of the embedding may occur unconsciously, a product of the cultural programming of the website participants. Other parts of it are intentional via design requirements, such as the globalization of standardization in user interface. My main interest in this research is: *'can we recognize cultural dimensions on school websites*?'

Hofstede's (1991) work on cultural dimensions contributes to the study and reassessment of current theories on software and websites, which interact with the cultures of societies in which they function, and are still relevant to the constant evolution of technology (communication tools) in the educational environment.

Israel was among the countries studied by Hofstede in his classic research of 1968 and 1972, and was attributed an index score for each of the four dimensions, thus making ORT school websites in Israel a relevant subject to be examined for cultural dimensions. Information technology is a well developed field in Israeli schools, particularly in the ORT educational network. Israel constitutes a valid case study to investigate the subject of cultural dimensions.

In 2001, the ORT Development Center introduced the '***Clickit***' platform, a content management system (CMS), which enables schools to create and manage their own websites. This was the answer to the general criticism regarding the integration of the Internet to the study of various subjects (E-learning). This new direction, described as a "push technology", is perceived as better suited to the needs of schools. It serves as an ***Intranet*** within the school, which provides pedagogical, didactic, and organizational solutions to the schools' requirements. The ***'Clickit*** ' platform's flexibility and simplicity have made it a very popular tool within ORT schools, which makes it all the more interesting to investigate, and draws attention to this new direction: from **E-learning** to **E-schooling**[1].

This study can be useful to school policy-makers, helping to direct educators towards new options and innovations that E-schooling presents. It also raises new issues to be considered, such as:

- *What is the role of E-schooling in the provision of education?*
- *Should E-schooling in the context of culture resemble traditional schooling, or should it differ from it?*
- *How does the role of teachers change in the E-schooling environment?*
- *Does E-schooling change the interaction among teachers, students, parents, etc?*

[1] Definition of E-Schooling: "Use of the WWW as an Extension of the School's Educational and Organizational Infrastructure" (ORT Wingate Seminar 2003).

- Does E-schooling create a new school culture? If so, what is the shape of the new culture?

In order to transmit culture, there should be an awareness of Israel's cultural characteristics when designing websites in Israeli schools.

1.3 Research questions

The major research question to be explored in this study is **how are cultural dimensions reflected on school websites in Israel?**

This question is addressed by applying Hofstede's (1991) well-know work, in which he classified cultural characteristics prevalent in global organizations into five "cultural dimensions" (*power distance*, *individualism & collectivism*, *masculinity* & *femininity*, *uncertainty avoidance*, and *time orientation*), and Marcus' (2001) interpretation and application of this model to website designs worldwide

1.3.1 I have divided the research question into four sub-questions.

1. How is ***Power Distance*** reflected on the design and user interface of ORT school websites?
2. How is ***Collectivism*** vs. ***Individualism*** reflected on the design and user interface of ORT school websites?
3. How is ***Masculinity*** vs. ***Femininity*** reflected on the design and user interface of ORT school websites?
4. How is ***Uncertainty Avoidance*** reflected on the design and user interface of ORT school websites?

I investigate these four sub-questions according to Hofstede's (1991) characteristics (that are applicable to educational organizations) and Marcus' (2001) parameters, focusing my observations

of ORT school websites on three layers of website architecture: user interface, services offered, and accessibility of information, as presented in the following four tables:

Sub-questions 1 - How is **Power Distance** reflected on the design and user interface of ORT school websites?	
Hofstede's characteristics (1991)	***Marcus' parameters*** (2001)
Power distance is "*the extent to which the less powerful members of institutions2 and organizations3 within a country expect and accept that power is distributed unequally*". **Low power distance**: • Limited dependence of subordinates on superiors. • Preference for consultation and interdependence between higher and lower ranks. • Small emotional distance: atmosphere allowing subordinates to approach and contradict their superiors. • Educational system is ***student-centered***. • Teachers treat students as basic equals and expect to be treated as equals by students. • Students argue, express disagreement and criticism in front of the teachers, initiative is encouraged. • Effective learning depends on two-way communication. • System is based on the students' well-developed need for independence. **High power distance**: • Considerable dependence of subordinates on superiors. • Polarization between dependence and counter dependence. • Large emotional distance between subordinates and their superiors. • The educational process is teacher-centered. • Intellectual paths outlined by teachers. • Strict order in the classroom. • All communication initiated by teachers, students speak up only when invited. • Teachers are never publicly criticized or contradicted. • Educational process is highly personalized.	• Access to information. • Hierarchies in mental models.4 • Emphasis on the social and moral order. • Focus on expertise, authority, experts, certifications, official stamps, or logos. • Prominence given to leaders vs. citizens, customers, or employees. • Importance of security and restrictions or barriers to access. • Social roles used to organize information.

[2] "**Institutions** are the basic elements of society like the family, school and the community" (Hofstede 1991, p.28).
[3] "**Organizations** are the places where people work" (Hofstede 1991, p.28).
[4] "A mental model refers to a representation in working memory that can be 'run' by the learner to understand a system, solve problems, or predict events" (Alessi & Trollip 2001, p. 28).

Table 1.1- Analysis of the sub-question on ***power distance*** according to Hofstede's characteristics (1991) and Marcus' parameters (2001).

From the table above one can see that Marcus (2001) makes his own interpretation of the power distance dimension, using the term "hierarchy" to describe the information architecture on the websites (e.g. access to information, or the manner in which the information is organized), and placing an emphasis on the role players (e.g. expertise, leaders, social roles).

Sub-questions 2 - How is ***Collectivism*** vs. ***Individualism*** reflected on the design and user interface of ORT school websites?

Hofstede's characteristics (1991)	***Marcus' parameters*** (2001)
In a ***collectivist*** society, • Identity is determined by the social network to which one belongs. • One's extended family or other in-group offers protection in exchange for loyalty. • Relationships are more important than tasks. • Collective interests are more important than individual interests; opinions are determined by group membership. • Purpose of education is to learn how to do. • Emphasis on adaptation to the skills and virtues necessary to be an acceptable group member of society. • Emphasis on tradition. • Learning is considered as a one-time process only. • Children are taught to think in terms of "we". • In-groups are reflected in the classroom: students from the same ethnic background often form subgroups in the classroom environment. In an ***individualist*** society, • Identity is based on the individual. • One is taught to take care of oneself and one's immediate family only. • Tasks are more important than relationships. • Individual interests are more important than collective interests. • Each individual is expected to have a private opinion. • Ideologies supporting individual freedom are more important than ideologies of equality. • Purpose of education is to learn how to learn. • Education prepares the individual for a place in a society consisting of other individuals: learning to cope with new, unknown and unforeseen circumstances. • Learning is perceived as a lifelong process. • Schools seek to impart the skills necessary for the "modern man". • Children are taught to think in terms of "I". • Speaking one's mind is encouraged.	• **Motivation** based on personal achievement: in individualist cultures vs. collectivist cultures. • **Images of success**: materialism and consumerism vs. achievement of social-political agendas. • **Rhetorical style**: controversial/argumentative speech and tolerance or encouragement of extreme claims vs. official slogans and subdued hyperbole and controversy. • **Prominence** given youth and action vs. aged, experienced, wise leaders and states of being. • **Importance given** individuals vs. products shown by themselves or with groups. • **Underlying sense of social morality**: emphasis on truth vs. relationships. • **Emphasis on change**: innovation and uniqueness vs. tradition and history. • **Willingness** to provide personal information vs. protection of personal data differentiating the individual from the group.

Table 1.2- Analysis of the sub-question on ***Collectivism*** vs. ***Individualism*** according to Hofstede's characteristics (1991) and Marcus' parameters (2001)**.**

From the table above, one can see that Marcus (2001) places an emphasis on the way individuals or groups as collectives present themselves, their identity, personality, priorities, and motivations.

Sub-questions 3 - How is Masculinity vs. Femininity reflected on the design and user interface of ORT school websites?	
Hofstede's characteristics (1991)	***Marcus' parameters*** (2001)
In **masculine cultures**: • Men are expected to be assertive, ambitious and tough, while women are expected to be tender and to care for relationships. • Material success and progress are considered dominant values in society. • Sympathy and support for the powerful. • Achievement is the norm; failing in school is unacceptable. • Boys and girls study different subjects. • Live in order to work. • Emphasis on competition and performance. • Aggressive conflict resolution. • Dominant religion stresses male authority. • Women's liberation means that women will be admitted to positions previously reserved to men. In **feminine cultures**: • Both genders are allowed to be tender and concerned with relationships. • Caring for others, preservation and welfare are considered dominant values in society. • Sympathy for the weak. • Average achievements in school are the norm; failing is not a disaster. • Boys and girls study same subjects. • Work in order to live. • Emphasis on solidarity and quality of work environment. • Compromise and negotiation form basis of conflict resolution. • Underprivileged should be helped. • Highest importance given to preservation of the environment. • Women's liberation means that both genders should share equal tasks at home and work.	User-interface and design elements in **masculine cultures:** • Traditional gender/family/age distinctions. • Work tasks, roles, and mastery, with quick results for limited tasks. • Navigation oriented to exploration and control. • Attention gained through games and competitions. • Graphics, sound, and animation used for utilitarian purposes. User-interface elements in **feminine cultures**: • Blurring of gender roles. • Mutual cooperation, exchange, and support, (rather than mastery and winning). • Attention gained through poetry, visual aesthetics, and appeals to unifying values.

Table 1.3- Analysis of sub-question on **masculinity** vs. **femininity** according to Hofstede's characteristics (1991) and Marcus' parameters (2001).

From the table above, one can see that Marcus (2001) makes his own interpretation of the masculinity vs. femininity dimension of the website's design (e.g. graphics, ways to gain attention, and navigation).

Sub-questions 4 - How is Uncertainty Avoidance reflected on the design and user interface of ORT school websites?	
Hofstede's characteristics (1991)	***Marcus' parameters*** (2001)
High uncertainty avoidance: • Uncertainty is perceived as a constant threat which must be suppressed. • Motivation gained by a sense of security. • Feelings of high stress, aggression, and subjective anxiety are common. • Fear of ambiguous and unfamiliar risks and situations; what is different is dangerous. • Strict rules for children on what is indecent and taboo. • Students are comfortable in structured educational settings and concerned with the right answers. • Resistance to innovation; deviant behaviour and ideas are suppressed. • Teachers expected to have all the answers. • Precision and punctuality are inherent. • Resistance to innovation. • Numerous precise rules which should be followed. • Nationalism, conservatism, law and order prevail. • Negative attitudes towards youth. • Experts and specialization highly respected.	**High uncertainty avoidance:** • Simplicity, with clear metaphors, limited choices, and restricted amounts of data. • Attempts to reveal or forecast the results or implications of actions before users act. • Navigation schemes intended to prevent users from becoming lost. • Mental models and help systems that focus on reducing "user errors". • Redundant cues (color, typography, sound, etc.) to reduce ambiguity.

Low uncertainty avoidance:	**Low uncertainty avoidance:**
• Uncertainty is accepted as a normal characteristic of life. • Aggression and emotions should not be displayed. • Low stress, subjective feelings of well-being. • Comfortable in ambiguous and unfamiliar situations and risks. • What is different is considered curious and interesting. • Leniency towards children on indecent and taboo subjects. • In educational settings, students are comfortable with open-ended learning situations and concerned with good discussions. • Teachers are not expected to have all the answers. • Deviant and innovative ideas are accepted. • Motivation is gained by achievement. • Few and general rules, common sense is accepted. • Rules which cannot be respected should be changed. • Positive attitudes towards youth. • Regionalism, internationalism, tolerance and moderation prevail. • Integration of minorities. • One's beliefs should not be imposed on others. • Respect for human rights.	• Complexity with maximal content and choices. • Acceptance (even encouragement) of wandering and risk, with a stigma on "over-protection". • Less control of navigation. • Mental models and help systems focus on understanding underlying concepts rather than narrow tasks. • Coding of color, typography, and sound to maximize information (multiple links without redundant cueing).

Table 1.4- Analysis of the sub-question on ***Uncertainty Avoidance*** according to Hofstede's characteristics (1991) and Marcus' parameters (2001)**.**

From the table above, one can see that Marcus' (2001) interpretation of Hofstede's (1991) characteristics emphasizes the content on the website, and the way in which it is presented (e.g. simplicity, use of metaphors, navigation).

1.4 Background

1.4.1 ORT

ORT was established in Russia in 1880 to train underprivileged Jews in Eastern Europe and provide them with basic skills to enable them to subsist independently. ORT has grown into a non-profit, non political organization, with activities in more than one hundred countries, and whose objective is to meet the educational and vocational requirements of students worldwide. The first ORT schools in Israel were established in 1949. ORT Israel includes today some 156 educational institutions which provide education to Jewish, Druze, Bedouin, Christian Arab and Muslim Arab students throughout Israel.

In addition to the official mandatory curriculum, ORT Israel provides specialized science and technology education, and a high level of education in a broad range of disciplines from grade 7 onward. Educational programs are established by ORT with the use of advanced and innovative methods and technology. ORT also places an emphasis on the development of universal social-educational values and values of Jewish heritage among its students, as well as the development of an awareness of the need to contribute to the Israeli society and state.

Through the ORT Moshinsky Research and Development Center, ORT Israel strives to offer its activities to all educational institutions throughout the country and provide a variety of educational tracks, from primary schools to colleges of higher education. It also develops and implements an innovative curriculum and educational initiatives, including advanced information and communication technology courseware and software. Furthermore, the development center ensures ORT's resources development - among its principals, teachers and management staff – by training the staff and teachers, publishing written educational material, and developing E-learning

courses such as the '***Aviv virtual school***', and software such as '***Clickit***' – a content management system for Internet sites.

1.4.2 Clickit

'***Clickit***' is an advanced content management system (CMS) for Internet sites developed by ORT to allow users – webmasters, site managers, content developers, on-line teachers, students, and classroom teachers – including those with no programming experience, to easily customize and administer their own websites. The system has a flexible and intuitive interface, and supports Hebrew, English, French, Spanish, Russian and Arabic, reflecting Israel's multi-cultural variety. The '***Clickit***' software can be used to build almost all types of websites currently used on the Internet. As mentioned in its documentation (Clickit 2001), the '***Clickit***' features components such as:

- ***Index*** – produces a catalogue of Internet sites according to a user-defined subject tree, provides short overviews and important information such as the site's language and rating by topic relevance or popularity, sites retrieved through a search operation presented as links with screen shots.
- ***Glossary*** – enables users to create a list of terms or names arranged alphabetically or according to other user-defined parameters. It can include texts, pictures, and links to other relevant websites.
- ***Management system*** – Enables teachers to monitor the individual as well as the collective progress of students in an online course. The up-to-date information on the status of assigned tasks helps teachers identify student weaknesses and strengths and to better gauge the pace of the online course.

- ***Examinations*** – with this component, teachers build a central database of exam questions which can then be used to create written or computerized exams.
- ***Local messaging system*** – registered site users – students, classroom teachers, virtual teachers and online experts – can communicate with each other from any computer using this option.
- ***Calendar*** – Site managers or other authorized users can mark various events throughout the year (meetings, examinations, due dates, etc.). The calendar can be viewed by day, week, month or year.
- ***Bulletin board*** – notices, including pictures, can be posted immediately.
- ***Surveys***- Customized surveys are easily produced and presented on the basis of user-defined parameters. Users can define various cross sections for analysis.

1.5 Previous research

1.5.1 Related research

Research related to the subject of culture as it is reflected on school websites follows two major paths. One focuses on cultural dimensions, their definitions, multi-culture, the role of schools in teaching social behaviour, moral codes and values as part of the existing culture, and social learning theories. The other direction followed by researchers focuses on school websites as windows of culture – from E-learning to E-schooling, including subjects such as interface design of web-based educational sites, interactivity, and the intranet and cyber societies.

The following table summarizes the related research used in this dissertation according to these two approaches.

	Researcher	Subject	Year
Theorists interested in defining culture, Cross-cultural issues and multi-culture.	Kroeber & Kluckhohn	Definition of culture and cross-culture communication, using key words such as patterns, behaviour, transmitted symbols, achievement of human groups, traditional ideas and attached values.	1952
	Edward T. Hall	Cultural anthropology and cultural sociology, concepts of cultural differences – time, context and space.	1963, 1976
	Geert Hofstede	Cultures and organizations – the five dimensions of cultural differences.	1991
	Shalom Schwartz	Cultural differences, list of values as cultural guiding principles.	1992, 1994
	Trompenaars & Hamden-Turner	Classification of culture according to behavioural and value patterns, and focusing on cultural dimensions of business executives.	1994, 1997
	Spencer-Oatey	Definitions of culture, with an emphasis on the role of culture as a factor that both influence and help interpret behaviour.	2000
Social education	Dewey	Social educations, the roles of schools in imparting skills and abilities that help achieve society's objectives.	1916
	Lamm	Social education.	1973
	Albert Bandura	Social learning theory describing human behavior in terms of continuous reciprocal interaction between cognitive, behavioural, and environmental influences.	1977
	Salomon & Perkins	Social learning theory, individual and social aspects of learning.	1998
	Perkins	Social learning theory – the active learner, the social learner, and the creative learner.	1999

	Researcher	Subject	Year
Interface design of web-based learning environments	Evers & Day	Interface design.	1997
	Alessi & Trollip	Web-based learning environments and elements of design.	2001
	Moore	Computer-mediated communication, four categories of student interaction: learner-content, learner-instructor, learner-learner, and learner-interface.	1999
	Hill	Web-based instruction – the dropout phenomenon.	2000
Cultural aspects as reflected on websites	Del Galdo & Nielsen	Internationalization and localization.	1996
	Kersten, Matwin, Noronhs, & Kersten	Software for cultures and cultures in software, highlighting culture, cross-culture, e-learning and web-based learning.	1999
	Gould, Zakaria & Shafiz	Cultural aspects as reflected on websites.	2001
	Marcus	Cross-cultural user-interface design.	2001
	Barber & Badre	Cultural aspects as reflected on websites, cultural markers.	2004
Intranet, cyberspace & virtual community.	Robert Christensen	Educational intranet: levels of complexity.	1996
	Victor	The role of school website.	2002
	Doherty	Cyberspace – as the creation of a new society, cyber society.	1995
	Winner	Cyberspace – the creation of a new community.	1995
	Ebersole	Philosophical assumptions underlying cyberspace.	1995
	Rheingold	The virtual community	1998

Table 1.5: Research related to the culture as it is reflected on school websites.

In summary, the different researches described in the literature review can be categorized into five major themes: the definition of culture, cross-cultural issues and multi-cultures; social education; interface design of web-based learning environments; cultural aspects as reflected on websites; and the Intranet, cyberspace and the virtual community. These different aspects and approaches have helped form the background to the study of culture as reflected on school websites.