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Student Expectations and Competencies in the Digital Library Learning/DILL Master Programme

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Abstract: This paper presents the selected results of the survey of the students' expectations and competencies in the Digital Library Learning/DILL Master Programme during the period 2007-2013. Since 2007 a diagnostic analysis (DA) survey was conducted among DILL students before they started their studies in Tallinn University. The goal of the DA survey was to clarify the needs and expectations of the learners for the Information and Knowledge Management (IKM) and Human Resource Management (HRM) modules with regard to the content and delivery options. It was expected that it would enable to tailor the IKM and HRM modules in the best way to suit students' requirements within the framework that had been set.
Keywords: Digital Library Learning/DILL Master Programme, students, higher education, expectations, competencies, diagnostic analysis, survey.

1. Introduction

This paper presents the selected results of the survey on the students' expectations and competencies in the Digital Library Learning/DILL joint international Master Programme during the period 2007-2013. DILL is a two-year programme for information professionals who intend to work in the complex world of digital libraries. It is a joint programme between Oslo and Akershus University College of Applied Sciences (Norway), Tallinn University (Estonia) and Parma University (Italy) which was supported in the framework of the European Union (EU) Erasmus Mundus programme during the period 2007-2013. This programme addresses some common concerns of cultural heritages institutions (as libraries, archival institutions and museums) and private firms (information providers, publishers, publications suppliers) as they work together to address the challenges and opportunities of the digital environment for the knowledge society (Virkus & Tammaro, 2005). Since 2013 the DILL

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programme is sustainable and is running without the support of Erasmus Mundus programme.

DILL is delivered on campus, and the students spend one term at each partner institution. The first three terms consist of six modules, each amounting to 15 ECTS. In the first semester at Oslo University College in Norway two modules are offered: (1) Research Methods and Theory of Science and (2) Digital Documents (now Digital Knowledge Organization). In the second semester at Tallinn University in Estonia the following modules are offered: (1) Information and Knowledge Management and (2) Human Resource Management. In the third semester at Parma University in Italy two modules are offered: (1) Access to Digital Libraries and (2) Users and Usage of Digital Libraries: Quantitative and Qualitative Evaluation. In the last term the students write their Master's Thesis amounting to 30 ECTS. Students can choose to write their Master's thesis at either of the three partner institutions; this depends on the topic and the location of the main supervisor (Virkus, 2010).

2. Diagnostic Analysis Survey

A diagnostic analysis (DA) survey has been conducted among DILL students before they start their studies at Tallinn University since 2007 as the student body is very diverse in terms of educational background, previous work and life experience, age, ethnicity, religion and many other ways. The goal of the DA survey is to clarify the needs and expectations of the learners for the Information and Knowledge Management (IKM) and Human Resource Management (HRM) modules with regard to the content and delivery options. It is expected that it would enable to tailor the IKM and HRM modules in the best way to suit students' requirements within the framework that have been set.

The objectives of the DA survey are:

- To gain information about the students' existing knowledge about IKM and HRM, prior to the commencement of the modules so that the modules can be delivered at the right level.
- To identify which topics and components of the modules, as set out in the original specification, are the most enthusiastically regarded by the participants, and which are likely to be the most useful for them in their future work.
- To identify students' preferences concerning course organisation and delivery methods.
- To gain specific information about access to and familiarity with the technology available to the participants (Virkus, 2010).

The data was collected during the period of 2007-2012 from the five students' intake: 2007-2009 (DILL1), 2008-2010 (DILL2), 2009-2011 (DILL3), 2010-2012 (DILL4) and 2011-2013 (DILL5). The data collection tool was a questionnaire. The questionnaire included qualitative free text responses and a limited number of quantitative tick boxes. The DA questionnaire was divided

into five sections: (i) Background Information, (ii) Course Content, (iii) Learning and Teaching Process, (iv) Technical Support and Skills, and (v) Media Preferences (Virkus, 2010).

The *Background Information* section requested demographic information including name, gender, age, country and previous job of the student. The *Course Content* section asked questions about previous experiences with IKM and HRM, the main authors who had influenced students' thinking about the IKM and HRM field, familiarity with IKM and HRM topics, the most relevant topics for them, and suggestions for modules' content. The *Learning and Teaching Process* section asked questions about students' learning experiences; for example, this section included the following questions: Which methods of training and support would you find most suitable? How would you rate the barriers in affecting your participation in courses? What are the main obstacles you regularly encounter in learning? What kind of training could help alleviate these? What experiences (negative and positive) you have had with different learning methods? How do you prefer to learn (learning style)? The *Technical Support and Skills* section asked questions about the familiarity and usage of information and communication technology (ICT) tools and social software. The *Media Preferences* section tried to find out what is the preferred way of distributing learning materials for them, what file formats do they prefer for electronic learning materials, and what is, according to their experiences, the most effective communication channel during the course. At the end of the DA questionnaire students were asked to provide additional comments under the question 'Is there anything else that you'd like us to know?' (Virkus, 2010).

3. Selected Results

The examples presented in this section are just some selected results from the DA survey due to the limits of space of this publication and a more comprehensive overview will be published elsewhere.

Background Information

The demographic information requested included name, gender, age, country and previous job of the student.

In the first DILL course there were eighteen students from 16 countries; students were from Australia, Canada (2 students), Colombia, Ethiopia (2 students), Ghana**,** India, Indonesia, Italy, Kenya, Kosovo, Kyrgyzstan, Laos, Maldives, South Africa, Tanzania and Thailand. There were eleven female and seven male students.

In the second DILL course twenty one students from 15 countries studied the programme: from Bosnia and Herzegovina, Botswana (2 students), Ethiopia (2 students), Ghana (2 students), Indonesia, Iran, Italy, Kenya, Nigeria (2 students), Taiwan, Thailand (2 students), Uganda, USA, Venezuela and Vietnam (2 students). There were fourteen female and seven male students.

In the third DILL course there were twenty students from 14 countries; students were from Bangladesh (2 students), Bosnia and Herzegovina, China, Ethiopia (2 students), India, Indonesia, Iran, Italy, Pakistan, Philippines (2 students), Serbia, Taiwan, Uganda (3 students) and Vietnam (2 students). There were ten female and ten male students.

In the fourth DILL course there were seventeen students from 16 countries; students were from Azerbaijan, Bangladesh, China, Cuba, Denmark, Ethiopia (2 students), Italy, Malaysia, the Netherlands, Norway, Philippines, Poland, Romania, Turkey, United States and Zimbabwe. There were nine female and eight mail students.

In the fifth DILL course there were sixteen students from 15 countries; students were from Brazil, Bangladesh (2 students), Germany, Greece, Hungary, India, Iran, Italy, Lithuania, Poland, Russia, Serbia, Spain, United States and Vietnam. There were twelve female and four mail students studied the programme.

Altogether 92 students from 48 countries studied in the DILL programme during the years 2007-2013; 56 female and 36 mail students. The following countries were represented: Australia, Azerbaijan, Bangladesh (5 students), Bosnia and Herzegovina (2 students), Botswana (2 students), Brazil, Canada (2 students), Colombia, China (2 students), Cuba, Denmark, Ethiopia (8 students), Germany, Ghana (3 students), Greece, Hungary, India (3 students), Indonesia (3 students), Iran (3 students), Italy (5 students), Kenya (2 students), Kosovo, Kyrgyzstan, Laos, Lithuania, Malaysia, Maldives, Netherlands, Nigeria (2 students), Norway, Pakistan, Philippines (3 students), Poland (2 students), Romania and Russia**.** The youngest student was 22 years old and the oldest student 52 years old within the programme (see Table 1).

Table1. Student Demographics

Intake	**Sex**	**Ages**	**Countries**
2007-2009	11 female, 7 mail	22<52 (average age 34)	16
2008-2010	14 female, 7 male	24<44 (average age 30)	15
2009-2011	10 female, 10 male	24<49 (average age 29)	14
2010-2012	9 female, 8 mail	23<37 (average age 29)	16
2011-2013	12 female, 4 mail	23<35 (average age 27)	15

Course Content

This section asked questions about previous experiences with IKM and HRM, the main authors who had influenced students' thinking about the IKM and HRM field, familiarity with IKM and HRM topics, the most relevant topics for them, and suggestions for the modules' content.

The main authors who had influenced students' thinking in the IKM field were Thomas H. Davenport, Ikujiro Nonaka, Hirotaka Takeuchi, Larry Prusak, Peter Senge and Tom Wilson. These were the only authors who were mentioned more than once by the students. In the HRM field the only author who was mentioned more than once was John Kotter. However, only a limited number of students answered this question.

Students were asked to indicate their familiarity with the IKM and HRM topics on the scale where 1 was 'no clue' and 10 'it's my research area'. Familiarity with the proposed IKM and HRM topics varied considerably among students in the academic year and within different intakes. There had always some students who assessed their competence level highly (it's my research area) in some topics, but the majority of students assessed their competence level from 1 to 5 on the proposed scale.

Students were asked to choose five out of the specified areas which were the most relevant for their studies. The most relevant topics varied considerably during the explored years and even within one year.

Learning and Teaching Process

The students were asked for their opinions relating to the most and less suitable methods of training and support. In 2007-2009 the most suitable methods of training and support were seminars, lectures (listen and learn), discussions, practical 'hands on' and case studies. In 2008-2010 the students favoured demos/experiments, practical 'hands on', case studies, a field work and coaching/mentoring/one-to-one learning. In 2009-2011 the most suitable methods of training and support were practical 'hands on' learning, demos/ experiments, a field work, seminars and discussions. In 2010-2012 the most suitable methods of training and support were discussions, practical 'hands on' learning, seminars, a field work and feedback/evaluation. In 2011-2013 the most suitable methods of training and support were publications (e.g. papers, reports of research results), practical 'hands on' learning, collaborative project work, demos/experiments and seminars (see Table 2).

Table2. Most Suitable Methods of Training and Support

Intake	**Priority 1**	**Priority 2**	**Priority 3**	**Priority 4**	**Priority 5**
DILL1 N=18	Seminars	Lectures	Discussions	Practical 'hands on' learning	Case Studies
DILL2 N=21	Demos/Ex-periments	Practical 'hands on' learning	Case Studies	Field Work	Coaching/ mentoring/ one-to-one learning

DILL3 N=20	Practical 'hands on' learning	Demos/ Experi-ments	Field Work	Seminars	Discussions
DILL4 N=17	Discussions	Practical 'hands on' learning	Seminars	Field Work	Feedback/ Evaluation
DILL5 N=16	Publications (e.g. papers, research reports)	Practical 'hands on' learning	Collaborat ive project work	Demos/Ex-periments	Seminars

In 2007-2009 the less suitable methods of training and support were role play, coaching/mentoring/one-to-one learning, group work, demos/experiments and multimedia (video/ computer-based) learning. In 2008-2010 the less suitable methods were assessments, discussions, group work, lectures and seminars. In 2009-2011 the less suitable methods were assessment, provision of teaching and learning resources, role play, group work and collaborative project work. In 2010-2012 the less suitable methods were role play, coaching/mentoring/one-to-one learning, multimedia (video/computer-based) learning, assessment and collaborative project work. In 2011-2013 the less suitable methods were role play, assessment, fieldwork, lectures and communication with other students (see Table 3).

Table3. Less Suitable Methods of Training and Support

Intake	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5
DILL1 N=18	Role play	Coaching/ mentoring/ one-to-one learning	Group Work	Demos/Ex-periments	Multimedia (video/ computer-based) learning
DILL2 N=21	Assess-ment	Discussion	Group Work	Lectures	Seminars
DILL3 N=20	Assess-ment	Provision of Teaching & Learning Resources	Role play	Group Work	Collabora-tive project work
DILL4 N=17	Role play	Coaching/ mentoring/ one-to-one learning	Multimedia (video/comp uter-based) learning	Assessment	Collabora-tive project work
DILL5 N=16	Role play	Assessment	Fieldwork	Lectures	Communi-cation with other students

Thus, there were quite different opinions relating to the most and less suitable methods of training and support among students during the period 2007-2013. For example, demos/experiments were the most suitable methods of training and support for DILL2 students, but the less suitable for DILL1. Lectures were among the most suitable methods of training for DILL1 students, but among the less suitable methods of training for DILL2 and DILL5 students. However, practical 'hands on' learning was among the most suitable methods of training for all DILL intakes and seminars were preferred also by all intakes except DILL2. Four intakes of the DILL programme referred to the role play and assessment as the less suitable methods of training and support.

The main obstacles encountered in learning by students were: lack of information, poor communication, resistance from the course management, badly timed courses, pressure of work, lack of ICT skills, too complex learning management systems, too long or too intensive courses.

Technical Support and Skills

The survey also aimed to determine the students' familiarity with several ICT applications and social software tools. This was vital because having a clear idea of the individual practices of students using various applications would inform any future decisions about how to use these applications effectively within the IKM and HRM modules.

The majority of DILL students knew how to use PowerPoint and MS Excel applications. More than half of students knew how to use the audio/video conferencing tools, create databases using MS Access and design a webpage. Only nine students out of 92 knew how to use javascript (see Table 4).

Table 4: Students' Familiarity with ICT Applications

	DILL1 N=18	**DILL2** N=21	**DILL3** N=20	**DILL4** N=17	**DILL5** N=16	**Total**
I can use PowerPoint for making presentations	18	19	20	17	16	90
I know how to use Microsoft Excel	17	17	18	17	16	85
I can use the audio/video conferencing tools	9	10	11	11	14	55
I can create databases using Microsoft Access	11	7	10	10	11	49
I know how to design a webpage	11	9	7	9	12	48
I know how to use	1	1	2	2	3	9

javascript						

The majority of DILL students were familiar with Skype. Fewer were familiar with other social software tools (blogs, wikis, tagging, flickr, podcasts) and only sixteen students out of 92 students had experiences with Second Life. There is no clear indication that students familiarity with social software tools has increased significantly during the years 2007-2013 (see Table 5).

Table 5: Students' Familiarity with Social Software Tools

	DILL1 N=18	**DILL2** N=21	**DILL3** N=20	**DILL4** N=17	**DILL5** N=16	**Total**
Skype	17	20	20	16	14	87
Blogs	13	17	15	15	15	75
Wikis	10	15	14	14	14	67
Tagging	11	14	13	15	12	65
Flickr	10	9	7	13	10	49
Podcasts	4	6	4	8	10	32
Second Life	2	2	7	2	3	16

Media Preferences

The purpose of this DA section was to find out what students preferences were with regard to the distribution of learning materials, what file formats they prefer for electronic learning materials, and what they have found to be the most effective communication channel during the course.

Printed textbooks were the most preferred learning materials for DILL students. Learning materials on CD-ROMs were not preferred by any group of students. Table 5 illustrates students' media preferences: 1 means highly preferred and 5 less preferred.

However, there were some differences relating to the preferences for some of the formats among DILL intakes. For example, while photocopies were a highly preferred form for DILL1, then for DILL2 photocopies were less preferred. Publicly available electronic documents on the WWW were a highly preferred form for DILL1, but for DILL3 these were the less preferred form.

Table 6: Student Preferences with Respect to Distribution of Learning Materials

	DILL1 N=18	**DILL2** N=21	**DILL3** N=20	**DILL4** N=17	**DILL5** N=16
Printed textbooks	1	2	1	2	1
Electronic documents in the LMS	2	1	3	4	2
Photocopies (readers	1	5	2	1	4

etc)					
Publicly available electronic documents on the WWW	1	3	5	3	3
E-mails (or attachments)	3	4	5	5	5
On CD-ROMs	4	5	4	5	5

The differences in the data collected for these five cohorts of the DILL programme have clearly demonstrated that student expectations and competencies in the Digital Library Learning/DILL Master Programme varied considerably during the explored years and even within one year. It is evident that we cannot assume one homogenous approach to course delivery for all subsequent intakes.

4. Conclusions

The diagnostic analysis survey proved to be a very useful tool in IKM and HRM modules' improvement and enabled us to tailor the modules in the best way to suit students' requirements and improve the quality of the student learning experience. However, it should be a continuous process in the educational institutions to better serve the needs of a varied student population. The differences in the data collected for these five cohorts of the DILL programme have clearly demonstrated that we cannot assume one homogenous approach to course delivery of the IKM and HRM modules can be developed and implemented for all subsequent intakes. On the contrary, ongoing review, flexibility in design and evaluation of course delivery are essential.

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