TOJQIH
The Online Journal of Quality in Higher Education

The Online Journal of Quality in Higher Education

Volume 3 Issue 2
April 2016

www.tojqih.net
01.04.2016

Contact Address:
Prof. Dr. Aytekin İŞMAN
TOJQIH, Editor
Sakarya-Turkey

Published in TURKEY

Message from the Editor-in-Chief

Dear Colleagues,

TOJQIH welcomes you. TOJQIH would like to thank you for your online journal interest. The online journal system has been diffused very fast for last two years. TOJQIH has continued to diffuse new trends in quality in higher education to all over the world since January, 2014. We hope that the volume 3, issue 2 will also successfully accomplish our global quality in higher education.

TOJQIH is confident that readers will learn and get different aspects on quality in higher education. Any views expressed in this publication are the views of the authors and are not the views of the Editor and TOJQIH.

TOJQIH thanks and appreciate all reviewers who have acted as reviewers for one or more submissions of this issue for their valuable contributions.

For any suggestions and comments on the international online journal TOJQIH, please do not hesitate to send mail.

Call for Papers

TOJQIH invites you article contributions. Submitted articles should be about all aspects of quality in higher education. The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJQIH. Manuscripts must be submitted in English.

TOJQIH is guided by it's editors, guest editors and advisory boards. If you are interested in contributing to TOJQIH as an author, guest editor or reviewer, please send your cv to tojqih.editor@gmail.com.

April 01, 2016
Prof. Dr. Muzaffer Elmas
Sakarya University

Table Of Contents

A FRAMEWORK FOR DEVELOPING AN INTERNATIONALISED MANAGEMENT INFORMATION SYSTEMS (MIS) CURRICULUM AT THE BACHELOR'S DEGREE LEVEL

Alptekin Erkollar
Management Information Systems Department, Faculty of Management, Sakarya University, Turkey
erkollar@sakarya.edu.tr

Birgit Oberer
Management Information Systems Department, Faculty of Engineering and Natural Sciences, Kadir Has University, Turkey
birgit.oberer@khas.edu.tr

Özlem Efiloğlu Kurt
Department of Computer Programming, Yalova University, Turkey
oekurt@yalova.edu.tr

Abstract: A curriculum is the foundation of the teaching-learning process. It involves developing programmes of study, teaching strategies, resources allocations, specific lesson plans and assessment of students, and faculty development. Management information systems (MIS) are one of rather few interdisciplinary fields of study that integrate knowledge of information technologies with business skills, educating students for professional practice within the fields of information technologies by providing strong conceptual foundations and addressing the deficiency of human resources in the area of information management.

In this study, MIS programmes at the bachelor's degree level, offered by universities in Germany and Turkey, were analysed in terms of general education requirements, degree requirements, and curricula. Based on this analysis and after evaluating reference models for curriculum development, a framework for developing an MIS curriculum with options for internationalisation was drafted. This framework for MIS curriculum development is a modular one, focusing on MIS specialisations, core modules, core courses and optional elective courses. It focuses on the categories programme, courses (main, elective), and majors, recommending (1) to expand courses and curricula offerings, (2) to embed international elements in existing courses and (3) options to establish international connections with reciprocity.

Keywords: MIS, curriculum, internationalisation, management information systems, framework.

INTRODUCTION

The MIS discipline significantly contributes to several domains, such as management, economics, government and business. Information systems, in general, and management systems, in particular, are complex systems requiring both organisational as well as technical expertise for design, development, implementation, management, and termination. These systems affect whole organisational structures as well as the operations of an organisation. The nature of this rapidly changing field requires a unique set of resources (faculty, infrastructure, physical space, knowledge). The field of management information systems is a rapid and changing one; Changing circumstances in society, businesses, infrastructure and technology have an impact on the requirements employers have for graduates in MIS. Therefore, these mentioned changes should also be reflected in higher education curricula development. Universities have mechanisms to maintain curricula in a frequent manner. The questions to be answered are how are 'requirements' for change generated, collected from which sources and when/how are they implemented? Quite often, higher education MIS curricula (as well as those in other fields) are updated according to the requirements of solely local businesses and governments and programme input derived from representatives of local organisations who are potentially those institutions/people who hire MIS graduates. Generally, local employers should not be the sole objective for majors in MIS. MIS graduates qualify for jobs around the world, in widely dispersed geographic

areas. Therefore, the curriculum development approach universities are focusing on should consider local, regional, national and international employment needs and solid knowledge of the MIS field.

LITERATURE REVIEW

An information system is an integrated set of components for collecting, storing, and processing data and for delivering information, knowledge, and digital products. Organisations heavily rely on information systems to carry out and manage their operations, interact with their customers and suppliers, and compete in the marketplace. Governments deploy information systems to provide services cost-effectively to citizens (AISSAC 2015).

Management Information Systems (MIS) are systems that provide decision makers with the information needed to manage a business effectively and efficiently. They support a broad array of business operations and enable an interaction between an organisation and its stakeholders. MIS systems support both, automated and human decision making. Basically, the following business strategies that drive the development and deployment of management information systems are cost-reduction, revenue growth and quality improvement. MIS systems support decision makers from all managerial levels (strategic, tactical, operational).

A management information systems programme combines a strong business curriculum with the experience and technical skills needed to compete in today's information-based society. MIS programmes are designed to teach students how to utilise software and information technology in business organisation (Lee et al. 1995; Harder and Harper, 2003).

The management information systems field is growing at an exponential rate as organisations struggle to stay current with new and emerging technologies, such as mobile applications and social media. Professionals are needed that can help organisations understand the business potential of these new technologies, how to develop new applications to meet changing market dynamics, and how to secure these systems from threats.

MIS degree programmes prepare students to enter the information systems (IS) and technology profession in a wide variety of positions. While the curriculum emphasises both the managerial and technical aspects of IS and technology, their overall structure is designed to prepare students for a career leading to managerial- and/or executive-level positions related to IS and technology. Students learn to design, implement, and operate information systems with the purpose of providing organisational decision-makers with the information needed to manage effectively and efficiently. In addition, students learn to obtain new business insights by using various business analytics and data management tools (Davis et al. 2002, Gill and Hu 1999).

Students who graduate with a Bachelor of Science in Management Information Systems will understand the development of business information systems and their use in the workplace. MIS is also known in the business field as information technology or information systems. A Bachelor of Science degree in management information systems combines courses from math, computer science and business fields (e.g. information management, statistics, DB systems, systems analysis, computer applications). MIS degree programmes teach students business, technical and interpersonal skills, which provide students with a wide range of transferable skills and more flexibility in their career options (AISSAC 2015).

Students graduating from an MIS programme generally are prepared to enter the workforce ready to tackle complex problems that combine the use of IT to improve business operations, focusing on decision making and quality improvement. These graduates can be seen as a bridge between management, informatics, economics and mathematics, talking the language of those people working in these fields. MIS is where business meets technology and innovation. MIS graduates have a broad knowledge on informatics related topics, have solid knowledge of mathematics and statistics and a good education in management (AISSAC 2015).

A literature review on curriculum development is integrated in the ‘study’ section.

THE STUDY

Aim of the study

This study reflects the first level of a European wide analysis on MIS (Management Information Systems) curricula, with the target to develop an MIS curriculum framework on a bachelor’s degree level, which might be applied by higher education institutions in Europe to develop country and institution specific MIS programmes and curricula. In level two of the analysis, which is out of the scope for this contribution, the number of countries analysed should be increased by 8 and a solid European framework for MIS curricula developed.

Research methodology

In this study, MIS programmes in Turkey and Germany were analysed and compared in order to create a drafted framework for curriculum development. The two countries, Turkey and Germany, were used as a starting point, since both authors are currently teaching for MIS programmes in Turkey, and one author is native German and taught many years in German programmes.

The URAP (University Ranking by Academic Performance) ranking was used to choose universities in both countries, which are offering MIS programmes. In this ranking, the following criteria are applied for universities:
(1) number of journal articles, (2) number of journal articles/faculty member, (3) number of cites, (4) number of cites/faculty member, (5) number of scientific documents, (6) number of scientific documents/faculty member, (7) number of PhD students, (8) number of PhD students/total number of students, (9) total number of students/total number of faculty members.

The following Turkish universities were included in this study: (1) BOĞAZİÇİ University (rank 12 in total university ranking) with the MIS programme offered by the Applied Sciences Faculty, (2) SAKARYA University (rank 34 in total university ranking) with the MIS programme offered by Management Faculty; and (3) KADIR HAS University (rank 75 in total university ranking) with the MIS programme offered by the Faculty of Engineering and Natural Sciences. Table 1 gives an overview on their general ranking.

Table 1: Ranking of Turkish Universities (general ranking)

Rank / total	**University**	**MIS programme?**	**Faculty**	**TP** (journal articles)	**TP** (cites)	**TP** (PhD students)	**TP** (Faculty Member/ Students)	**TP Ranking** (2015-2016)
...		-						
12	BOĞAZİÇİ University	X	Applied Sciences	143.74	129.92	144.89	57.11	625.17
...		-						
34	SAKARYA University	X	Management	122.24	109.85	130.30	42.25	512.16
...		-						
75	KADIR HAS University	X	Engineering and Natural Sciences	77.74	67.82	97.93	46.80	376.69

TP = total points

Applying the URAP ranking, the following German universities were included in this study: Heidelberg University, University of Cologne and University of Leipzig. Table 2 gives an overview on the German ranking.

Table 2: Ranking of German Universities (general ranking)

Rank / Germany	**University**	**MIS programme?**	**Faculty/Department**	**Rank** /world	**Category**	**TP** (journal articles)	**TP** (cites)	**Information /Computer Science Ranking** (world)	**Information /Computer Science Programmes Total Score** (world)	**TP Ranking** (2015-2016)
1	Heidelberg University	X	Computer Science	47	A++	88.84	94.62	166	56.58	423.54
20	University of Cologne	X	Faculty of Economics and Social Sciences	202	A+	75.12	74.24	446	52.47	350.36
26	Leipzig University	X	Administration Faculty	273	A	72.54	70.94	287	53.83	336.59

TP = total points

To be able to conduct this study, the different terms related to Management Information Systems (MIS) were analysed. In Turkey, MIS programmes are named (1) Management Information Systems, and (2) Business Informatics. In Germany the following terms are associated with programmes offering MIS relevant content: (1) Management Information Systems, (2) Business Information Systems, (3) Information Management, (4) Computer Science and (5) Business Informatics (German: Wirtschaftsinformatik). Basics on the universities included in this study are given in table 4.

Table 3: Universities included in the study (6)

Country	University	MIS programme	Faculty	Programme	Student quota (TR)	Degree	Duration (semester)	Practical training	Thesis	ECTS
TR	BOĞAZİÇİ University	X	Applied Sciences	MIS	62	Bachelor of Science	8	X	X	240
TR	SAKARYA University	X	Management	MIS	41		8	X	X	240
TR	KADIR HAS University	X	Engineering and Natural Sciences	MIS	45		8	X	X	240
DE	HEIDELBERG University	X	Computer Science	Applied Computer Science			6	X	X	180
DE	University of COLOGNE	X	Faculty of Economics and Social Sciences	Information Systems			6	--	X	180
DE	LEIPZIG University	X	Administration Faculty	Business Information Systems			6	X	X	180

Table 4: A comparison on selected criteria

CRITERIA	BOĞAZİÇİ	SAKARYA	KADIR HAS	HEIDELBERG	COLOGNE	LEIPZIG
Founded in	1863	1992	1997	1386	1388	1409
MIS programme	1995	2011	2008			
Student quota	62	41	45			
Study duration (years)	4	4	4	3	3	3
Practical training	x	x	x	x	x	x
Practical reports	x	x	x	x	x	x
Thesis	x	x	x	x	x	x
Colloquium	x	x	x	x	x	x
ECTS	240	240	240	180	180	180
Degree	Bachelor of Science	Bachelor of Science	Bachelor of Science	Bachelor of Science	Bachelor of Science	Bachelor of Science
English courses	---	X (1)	X (4)	---	---	---
compulsory	courses	courses	courses	modules	modules	modules
Electives	COURSES Unrestricted: 2 Department: 4	COURSES elective courses to be taken from a whole university pool (9)	COURSES Technical (4) Social (2) Business/Man. (2)	SUBJECTS 2 elective subjects	SUBJECTS 2 elective subjects	SUBJECTS 2 elective subjects
# of IT courses (basic studies) /	19	26	20	23	19	18
# of B/M courses (basic studies)	13	10	9	5	6	6
# of electives (specialised)	18	9	9	6	6	6

COURSE STRUCTURE	
BOĞAZİÇİ	*Compulsory courses:* Introduction to Information systems and technology, Programming and Algorithms, object oriented programming, introduction to database, web based application development, computer hardware and software systems, system analysis and design, data mining, database systems, object oriented modelling, business application development, quantitative methods of decision making, enterprise information systems, IS project management, CRM, Decision support systems, seminar, eBusiness management, supply chain management *Minor compulsory courses*: economics I and II, Management and organisation, business mathematics I and II, principles of marketing, financial accounting, statistics I and II, managerial accounting, research methodology, managerial communication, cyber law, finance *Departmental elective courses*: strategic management, Business Applications of AI, Advanced business programming, Evaluation of Software and hardware, electronic business, data mining, simulation modelling and analysis, applied research in MIS, knowledge management, systems dynamic modelling, distributed application development, web applications development, IS project management, internet programming, entrepreneurship in IT, leadership and motivation, financial management, financial information systems,
SAKARYA	*Compulsory courses:* Introduction to information systems, Algorithms and data structures, introduction to programming, operations research, management information systems, Entrepreneurship, process analysis, systems analysis and design, programming languages, visual programming, logistics and supply chain management, Introduction to databases and DB management, Computer hardware and operating systems, system simulation, ERP systems, Human computer interaction, game theory, disaster management, HR information systems, UML modelling, quantitative data analysis, management of IT projects, Queuing theory, network management and security, web design and internet programming, data mining and BI, seminar in MIS, artificial intelligence, Geographic information systems, macro programming in organisations *Minor compulsory courses:* introduction to law, economics, introduction to business, mathematics, management and organisation, verbal and written communication skills, financial accounting, business mathematics, research methods, behavioural sciences, marketing management, statistics and business applications, Human resource management, production management, IT law and ethics, financial management, cost accounting, entrepreneurship, project management *Elective courses:* managerial accounting, management of IT projects, Queuing theory, network management and security, web design and internet programming, data mining and BI, seminar, artificial intelligence, geographic information systems
KADIR HAS	*Compulsory courses:* Introduction to computing, Internet and Web programming, problem solving and Algorithms, Decision Support Systems, Foundations of IS, Visualisation and IT Architecture, Operating systems, DB Systems, Server Side programming, IT Auditing, Data Mining and BI, Computer Networks and Security, Enterprise Information Systems, E-Commerce Systems, Information & Technology Management, IT Innovation and Entrepreneurship, cloud computing, social media and web analytics, information systems analysis and design, IT project management *Minor compulsory courses*: Economics I and II, Mathematics I and II, Management and Organisation, Principles of Marketing, Principles of Accounting, Interpersonal communication Skills, Basic Finance *Elective courses:* Computational Methods and Tools, Telecommunication Systems, Business Data Communication, Business Process Management, Competitive Intelligence, Strategic Management, Disaster Recovery, Entrepreneurial Marketing, Business Continuity

HEIDELBERG	*Compulsory modules (informatics):* practical informatics, programming, technical informatics, Algorithms and data structures, operating systems and networks, software engineering, theoretic informatics, databases, *Compulsory modules (mathematics): mathematics I and II, linear algebra, analysis, numeric* *Elective specialisations:* computer graphics and visualisation, information systems engineering, optimization, technical informatics, scientific calculation *Elective modules*: informatics (python, informatics and society), mathematics (analysis II, mathematical logics, statistics and probability), technical informatics
COLOGNE	*Compulsory modules (basic level):* informatics, advanced informatics I and II, business informatics (basics), advanced business informatics I and II, Business management, mathematics, statistics. *Electives modules*: management (corporate development, finance, marketing, supply chain management), informatics (applied informatics, technical informatics, mathematics I, II and III), business informatics (business informatics I and II)
LEIPZIG	*Compulsory modules:* Business Informatics I and II, DB systems I and II, structured programming, distributed applications, object oriented programming, web techniques I and II, software techniques, Web science, Introduction to Business management, Accounting I and II, Economics *Optional modules*: mathematics for engineers, statistics and probability, law for business managers *2 elective subjects*: course for 10 ECTS each to be taken

FRAMEWORK FOR MIS CURRICULUM DEVELOPMENT

Challenges in designing a framework for an international MIS curriculum are, among other things, the study duration, which might be different in countries who are willing to apply the framework (in Turkey students are studying 8 semester, whereas in Germany they need 6 semester to get a bachelor's degree degree), the corresponding values for ECTS, and mainly the different possible options for curriculum structure (e.g. elective courses, elective modules, specialisations). To be able to develop a flexible applicable framework for MIS curriculum development in a first step available course development frameworks (computer science, IT, management information systems) were analysed.

Literature review on curriculum development

The ACM, the Association for Information Technology Professional (formerly the Data Processing Management Association (DPMA) and the Association for Information Systems (AIS) have taken the task of developing curricula for information systems for the past sixty years. All of the IS curriculum models have as a common goal to provide advice for university faculty that will guide the preparation of graduates (ACM 1983; Couger et al. 1995, Feinstein et al. 1999, Pierson et al. 2008, Downey et al. 2008).

Generally, forces having an influence on curriculum development are faculty, community, university, students, technology, competitors and organisational constraints (Sandman 1993). Print (1993) defined the following phases for the development of a curriculum: (1) organisation, (2) development and (3) application, focusing on the components (a) analysis, (b) instructional evaluation, (c) learning activities content, (d) aims and goals and (e)objectives (Kung et al. 2006, Apigian and Gambill 2010).

In 2000, Davey and Tatnell developed a Rapid Application Development (RAD) approach to develop MIS curricula in rapidly changing environments, such as information systems, management information systems, or business informatics. They focused on determining the organisational policy (organisational requirements and influence factors from university); determining the nature of the industry (those institutions who have a need for students graduating from the programme); determining physical constraints; determining aim and goals of each single course; formulating teaching and learning principles; determining course content.

Longenecker, Feinstein and Clark (2012) compared 11 available model curricula and broke skills into categories based on their historical placement in various curriculum development models.

Table 5: model curricula (Longenecker, Feinstein and Clark)

category	Skills			
A	21 skills relatively common to all models			
B	14 skills relatively common to later models			
C	53 skills relatively common to later models yet were dropped by IS 2010			
D	11 skills relatively common to all models except dropped by IS 2010			
E	24 skills relatively common to earlier models but dropped in all later models			
F	2 Skills added uniquely in IS 2010			
G	13 Skills based on NICE (2012) specifications but not in any curriculum model			
GROUPED SKILLS				
Group	**Skills**	**grouping**	**Calculation**	**#**
1	Skills Current Through 2010	C+D+F	53+11+2	66
2	Active Skills	A+B + group 1	21+14 + 66	101
3	New Skills not in any model	G	13	13
4	Retired skills	E	24	24
	TOTAL NUMBER OF SKILLS	Group 2+3+4	101+13+24	138

The Association on Computing Machinery (ACM) and the Association for Information Systems (AIS) developed the IS2000 Curriculum Guidelines for Undergraduate Degree Programmes in Information Systems. Topi et al. (2010) define the following high level IS/MIS capabilities, that a curriculum specifies as the highest level outcome expectations: (a) Improving organisational processes, (b) exploiting opportunities created by technology innovations, (c) understanding and addressing information requirements, (d) designing and managing enterprise architecture, (e) identifying and evaluating solution and sourcing alternatives, (f) securing data and infrastructure, (g) understanding, managing and controlling IT risks. They translated these high level capabilities in three categories of knowledge and skills, which are (1) information systems specific knowledge and skills, (2) Foundational knowledge and skills, and (3) domain fundamentals. Table 6 summarises these knowledge and skills categories.

Table 6: knowledge and skills categories (Topi et al. 2010)

C1 Specific knowledge and skills	
1.1	Identifying and designing opportunities for IT-enabled organisational improvement
1.2	Analysing trade-offs
1.3	Designing and implementing information systems solutions
1.4	Managing ongoing information technology operations
C2 Foundational knowledge and skills	
2.1	Leadership and collaboration
2.2	Communication
2.3	Negotiation
2.4	Analytical and critical thinking, including creativity and ethical analysis
2.5	Mathematical foundations
C3 Domain fundamentals	
3.1	General models of a domain
3.2	Key specialisations within a domain and
3.3	Evaluation of performance within a domain.

The IS2010 curriculum model includes seven core courses: (1) Foundations of Information Systems, (2) Data and Information Management, (3) Enterprise Architecture, (4) IS Project Management, (5) IT Infrastructure, (6) System Analysis and Design, (7) IS Strategy, Management, and Acquisition; and mentions additionally some samples for possible elective courses.

Requirements for the curriculum development framework designed in this study

Derived from the general curriculum models analysed and the analysis of MIS programmes in Germany and Turkey conducted in this study, below general requirements on curriculum development are summarized.

- The framework should be a guide including recommendations for the MIS community (national, international)
- the framework should consider employment requirements (local(if needed), national, international)
- the framework should be used by faculty to design MIS programmes
- the framework should offer predefined course objectives, faculty could choose from and options for faculty to define own course objectives as well.
- Following the BOLOGNA process, the framework should include a MATRIX for matching course and programme learning outcomes
- the framework should have a modular structure
- the framework should define core courses which should be added to all MIS programmes (international oriented)
- the other course should have a modular structure, with elective modules to be chosen by faculty

Furthermore, general characteristics of MIS professionals were defined, to derive concrete course categories:

- MIS professionals can be employed in all types of industries, at different organisational levels and in different positions based on their specialisation focused on during their studies and their business life.
- MIS professionals are flexible, business/industry independent problem solver.
- MIS professionals are familiar with the analysis, design, development, implementation, maintenance and optimization of (management) information systems.
- MIS professionals have strong communication skills and a team player thinking approach

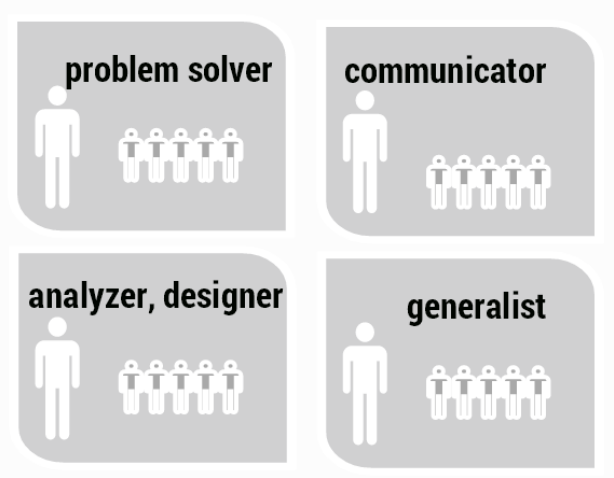

Figure 1: Characteristics of MIS professionals

MIS curriculum development framework

The MIS curriculum development framework is designed as an interactive one. The faculty might choose the one which fits the programme and university needs the best from different options.
In a first step, the faculty selects the duration (in semester) of the planned MIS programme. For each structure (6 semester, 8 semester, etc.) templates for MIS curriculum development are pre-defined. The faculty can choose from the corresponding templates.

After choosing duration, the planned specialisation (main focus) has to be selected. Available options are: (1) Management information systems, (2) Business, (3) Informatics, (4) Mathematics. Based on the selection from several pre-defined templates for MIS curriculum one might be chosen.
For all templates core courses are defined (e.g. Foundations of Information Systems, System Analysis and Design, Information Management, Knowledge Management, Enterprise Architecture; all of them for the MIS specialisation). This list might be customized by faculty.
To the core courses defined, corresponding modules are pre-defined. The modules cover the following areas:

- Strategic Management and Organisational Transformation
- Information and Knowledge Management
- Business Mathematics and Statistics
- Technical Informatics
- Business Informatics/Management Information Systems
- Programming
- Application development
- System Design and Analysis/Modelling
- Data Mining and Business Intelligence

According to the total number of ECTS which the faculty defines for the courses (mainly given by national regulations), different modules are available and selectable. Generally, for each course ECTS are predefined, but might be customised by the faculty. Each module contains several courses. Basically, courses defined might be matched with up to two different modules. There is a restriction that each course can be integrated in one curriculum once. In case the faculty chooses e.g. two modules, in both of them the same course is integrated, and there should be an error message, wherein the faculty has to deselect one of the duplicate courses by choosing a substitute course manually. The number of courses included in a module depends on the template curriculum chosen by faculty. On a whole, the framework can easily and flexibly be adopted for the faculty's needs.
For each programme, depending on the selected specialisation, pre-defined programme outcomes are available (list might be easily customised by the faculty). For each course integrated in one or more curriculum templates, besides the title and ECTS, learning outcomes (at least 3) are pre-defined (customisable).
Additionally, according to the requirements of Bologna, a programme/course matching matrix is defined, showing for any course as to which of the programme outcomes might be addressed (Contribution Level: 1 low, 2 medium, 3 high).
One section in the framework is available for national triggered courses. If needed, this section can be used for specific national courses, e.g. Atatürk's principles in Turkey, or any language besides English.
Another section is reserved for the English language. If necessary, up to four English courses might be included in the curriculum.
Sections which are not used (e.g. national related ones, or language sections) might be filled with elective courses.
For elective courses, the following structures are available and can be selected by the faculty: (1) technical electives, (2) business/management electives, (3) social electives.
The faculty might choose one, two or all three categories of elective courses.
The faculty can choose the number of courses for each section. The framework will show how many of the total ECTS are still available for matching.
The faculty can assign courses to each elective section or use pre-defined lists. Each course might be added to each section but only once in one curriculum.

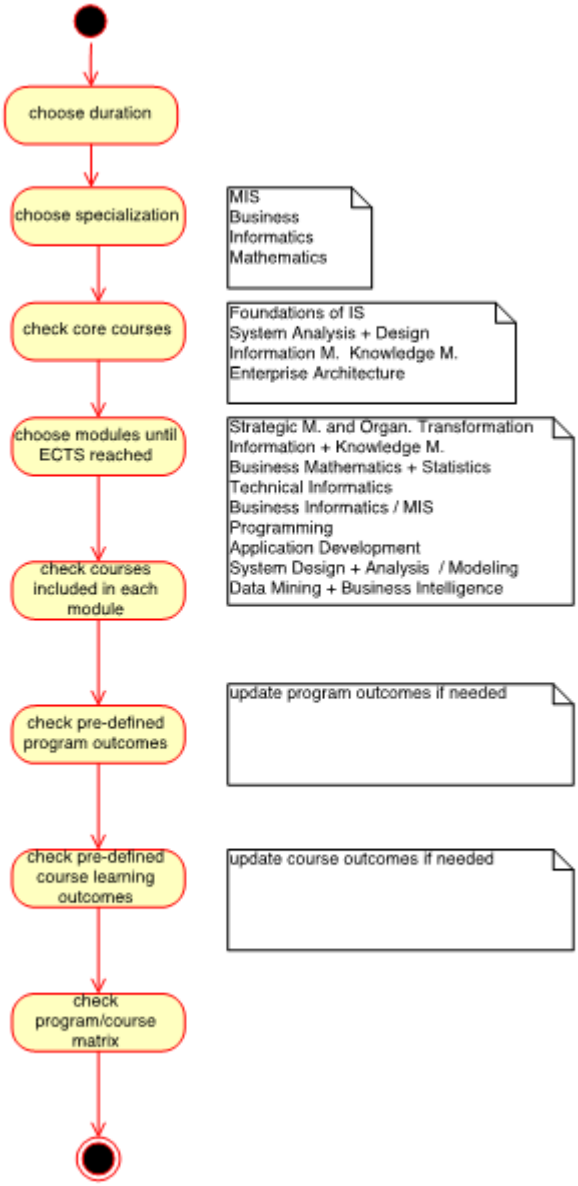

Figure 2: Approach model

Table 7: course- programme outcome matching matrix (sample)

Each course included in the curriculum has to be matched with the programme outcomes.

Code	Course	PO1	PO2	PO3	PON
MIS101	Management + Organ.	1			1
MIS342	Data Mining	2	2	3	
MIS543	Technology Management			3	

Contribution Level: 1 low, 2 medium, 3 high

Further studies

In this study, a static framework for MIS curriculum development, based on the analysis of reference models on curriculum development, and the analysis of MIS programmes offered in two countries, Germany and Turkey, was introduced. In a next step, further countries should be included in the analysis: the United Kingdom, Denmark, Italy, and Austria. The findings of this extended analysis should be integrated in an updated version of the framework in which the drafted modules of version 1 should be integrated. The framework should be interactive and easily adoptable for the faculty's needs

REFERENCES

AISSAC (Southern African Chapter of the Association for Information Systems) (2015), What is an information system?. Retrieved from: http:// http://www.aissac.org/

Apigian, C.H. & Gambill, S.E. (2010). Are We Teaching the IS 2009 Model Curriculum? Journal of Information Systems Education, 21(4), 411-420.

Association for Computing Machinery (1983). 'ACM Recommendations for Information Systems', vol. II, New York: ACM Committee on Computer Curricula of ACM Education Board.

Couger, J. D., Davis, G. B., Dologite, D. G., Feinstein, D. L., Gorgone, J. T., Jenkins, A. M., Kasper, G. M., Little, J. C., Herbert E. Longenecker, J., and Valacich, J. S. (1995). 'IS'95: Guideline for Undergraduate IS Curriculum', MIS Quarterly (19:3), pp. 341--359.

Davay, B. and Tatnall, A. (2000), 'Rapid Curriculum Development: A RAD approach to MIS Curriculum Development', Proceedings of ISECON (Information Systems Education Conference), Foundation for Information Technology Education, pp.114-121.

Davis, G.B., Feinstein, D., Gorgone, J.T., Longenecker, Jr., H. E., & Valacich, J.S. (2002), 'IS 2002: An Update of the Information Systems Model Curriculum', Proceedings of the Sixteenth Annual Conference of the International Academy for Information Management, New Orleans, LA, pp. 76-82.

Downey, J. P., McMurtrey, M. E., and Zeltmann, S. M. (2008), 'Mapping the MIS curriculum based on critical skills of new graduates: an empirical examination of IT professionals', Journal of Information Systems Education, 19(3), pp. 351-364.

Feinstein, D. L, Kasper, G. M., Luftman, J. N., Stohr, E. A., Valacich, J. S., and Wigand, R. T. (1999), 'MSIS 2000 Model Curriculum and Guidelines for Graduate Degree Programmes in Information Systems', Association for Computing Machinery and Association of Information Systems.

Gill, T. G. and Hu, Q. (1999). 'The evolving undergraduate information systems education: A survey of the U.S. institutions', Journal of Education for Business, 74, pp. 289-295.

Harder, J. and Harper, J. (2003), 'A Framework For MIS Student Outcome Assessment And Programme Review', Review of Business Information Systems, vol. 7, no 4, pp. 83-92.

Kung, M., Yang, S. C., and Zhang, Y. (2006). 'The Changing Information Systems (IS) Curriculum: A Survey of Undergraduate Programmes in the United States', Journal of Education for Business, Vol. 81, No. 6, pp. 9.

Lee, D.M., Trauth, E.M., & Farwell, D. (1995), 'Critical Skills and Knowledge Requirements of IS Professionals,: A Joint Academic / Industry Investigation', MIS Quarterly, (19:3), pp. 313-337.

Lucey, T. (2005).'Management Information Systems', Cengage Learning.

Pierson, J. K., Kruck, S. E., and Teer, F. (2008). 'Trends In Names Of Undergraduate Computer-Related Majors in ACSB-Accredited Schools of Business in the USA'. The Journal of Computer Information Systems (49:2), pp. 26--31.

Print, M. (1993). 'Curriculum Development and Design', Allen & Unwin, London.
Sandman, T. E. (1993). 'A Framework for Adapting a MS/MIS Curriculum to a Changing Environment'. Journal of Computer Information Systems 34(2), pp. 69-73.

Topi, H., Valacich, J., Wright, R., Kaiser, K., Nunamaker, J., Sipior, J. and Vreede, G. (2010).' IS2010, Curriculum Guidelines for Undergraduate Degree Programmes in Information Systems', Association for Computing Machinery (ACM) and Association for Information Systems (AIS).

A RESEARCH ON PROSPECTIVE TEACHERS' MEDIA LITERACY COMPETENCIES IN HIGHER EDUCATION INSTITUTIONS

Ergün RECEPOĞLU
Faculty of Education, Kastamonu University, Kastamanu, Turkey
erecepoglu@ kastamonu.edu.tr

Serpil RECEPOĞLU
Faculty of Education, Kastamonu University, Kastamanu, Turkey
melekrecepoglu@gmail.com

Abstract: This study aims to investigate perceptions of prospective teachers' media literacy competencies in higher education institutions in terms of different variables. This is a descriptive research in the survey model. Research group includes 653 prospective teachers who study in different teacher education programs in 2012-2013 academic periods in Faculty of Education at Kastamonu University. Data is collected by "Media Literacy Level Assessment Scale". The frequency, percentage, arithmetical mean and standard deviation of the answers were calculated. Independent t-Test and One-Way ANOVA were performed to analyze the data. According to research findings, it is found that perceptions of prospective teachers about their media literacy competencies are high. Perceptions of prospective teachers about their media literacy competencies don't change significantly according to their gender and age. However; perceptions of prospective teachers about their media literacy competencies change significantly according to their programs. Having a computer, having an access to internet and reading newspaper regularly affects perceptions of prospective teachers about their media literacy competencies significantly.
Keywords: Media literacy, prospective teachers, teacher education

INTRODUCTION

The innovations and developments in information and communication technologies changed the world and made impossible things possible in the world of the 21st century. These rapid and remarkable advances have influenced life in many ways and have caused globalization of knowledge, communication and the expansion of the mass media.

The world of the 21st century is controlled by media, driven by technology, and globalized day-by-day. In other words, it is a place where people are more connected with each other (Kellner & Share, 2007). Expected skills and competencies of individuals also changed in order to keep pace with this development and to take advantage of it. Individuals must be qualified and literate in many ways. Therefore, the concept of literacy has gained great importance recently.

The concept of literacy includes "gaining skills and knowledge to read, interpret, and produce certain types of

texts and artifacts and to gain intellectual tools and capacities to fully participate in one's culture and society" (Kellner & Share, 2005: 369). Individuals who can do research and analysis, think critically and construct information via interpretation could be said to have the qualifications expected from the 21st century human in this rapidly developing world of information. Today, it is very easy to reach the necessary information, and individuals must be able to demonstrate more conscious behavior (Som & Kurt, 2012). Therefore, various kinds of literacy emerged such as information literacy, visual literacy, computer literacy, science, environment literacy, cultural literacy, technology literacy and media literacy. Media literacy has received widespread attention within the past fifty years in the world, especially in USA, England, Canada and Australia. However; media literacy concept has been on the agenda of Turkey in the last few years. The Turkish Ministry of National Education and Radio and Television Supreme Council (RTUK) has made great leaps recently by introducing media education into curriculum of the primary schools. These steps are very encouraging and significant efforts towards to a media literate society.

Turkey is at the very beginning of the road in this field since the change has started after the foundation of "Violence Prevention Platform" under the government ministry in 2004, in which the leading public institutions, the non-governmental organizations and universities represented. This platform contributed to the development of media literacy. The necessity for media literacy training in the curriculum of elementary and secondary education is highlighted through conclusion of a conference of Media and Violence Sub Working Group platform (Altun, 2009).

Being media literate is of great importance in Turkey as mass media in Turkey as especially popular TV has a great influence on the daily life of Turkish citizens and society. Mass media influences life in many ways aspects, and media is the most powerful instrument in shaping daily routines and life of Turkish citizens.

According to a research by UNESCO in 2005, Turkey is the second country in the World watching TV on an average 3.5 hours per day. Turkey has passed to the audio-visual culture without completing the transition process from the oral to the written culture. As a result, the circulation of newspapers is quite low (4–4.5 million per day) for a population of 75 million. Even though the population of the country has doubled since 1960, this rate has stood still. Although more than 300 private TV stations (24 of them are nation-wide), more than 1000 private radio stations and 700 newspapers exist, this does not signify that there is pluralism within the media. There are mainly four big groups controlling the mainstream media, which do not give any chance for local ones to survive. Turkish media is over-dependent on technology and importation is required to replace by investing on qualified human resources and productivity. Turkish citizens are predictably in need of critical approach in such media environment. However, they do not have knowledge about the new media ownership structure, the close relationships between the media politics-business world and the deconstruction of the messages. Since Turkey is still a developing country with a high degree of dependency on the global media, Turkish citizens' increasing level of critical thinking and self-expression through the media literacy would be the core element to expand the culture of democracy (İnceoğlu 2007a). At this point the significance of being media literate is increasing continuously.

Media and Media Literacy

Mass communication tools are products of the communication needs of individuals and fulfill the function of sharing for innumerous activities such as gathering news, information, visual publicity and entertainment. Through these tools, large masses get information about each other and communication has now become

systematic. Media is the most general name to call this system and is a concept, covering all mass communication elements (Nalçaoğlu, 2003). Media performs the functions of informing and entertaining the society. It is also an indispensable element for modern and democratic societies, providing social services such as educating, protecting the rights of, influencing and controlling societies (Balcı & Gergin, 2008). Media is a significant and indispensable reality of life, and it has growing effects on the processes of economic, cultural, and political decisions. Mass media is the cornerstone of social change in many aspects. Mass media not only changes itself and forms the shape of the communication but also it affects and determines socialization processes (Bilgili, 2006).

Media pioneers economic, social, cultural, and political transformation as it has unique abilities: provides opportunities for creativity, disseminates information constantly, affects more than one sense organ, allows a high degree of access, and applies to both education and entertainment. In addition, media enjoys wide acceptance as the primary news source (Çelenk, 2005; Ertürk & Gül, 2006; Tığlı, 2006).

The contemporary world is bombarded every second by visual images, complicated audio arrangements and a variety of media formats (Kellner & Share, 2007). Media is everywhere and children are in contact with all kinds of media at present. Traditional media and digital media are being greatly effective in children's lives today. It is impossible to distinguish between traditional media and digital media. For example, it is possible to read newspapers and watch television and film in a computer or a mobile phone. Google earth makes it possible to virtually take a walk in a neighborhood in another country far away instead of looking at a map in an Atlas. In various virtual communities, students with similar interests are able to be in contact with each other although they might be in different countries. Media literacy education is important today because more and more children have practical access to a variety of media both at home and at school (Oxstrand, 2009).

Mass media is a powerful instrument for both social control and change (Demir, 2006; Kotaman & Avcı, 2006). The media has the potential to shape personalities and change the way we perceive and understand the world and our immediate reality. In addition, it can be seen that great number of people rely on the internet to gain information, read news, listen to music, play games, and complete work. In recent years, the media has become one of the most important channels for the acquisition of knowledge for children in the modern world (Bennett, Maton, & Kervin, 2008; Cabra-Torres & Marciales-Vivas, 2009; Liu & Chang, 2010; Prensky, 2001; Tapscott, 2009). Kartal (2007) states in his research on secondary school students that these students spend 2-3 hours daily in front of the television and 3-4 hours daily in Internet. Kartal also adds that these students read 4-7 newspapers weekly which are 2-3 different types.

There have been some problems in society because of advancing influence of media: Media monopolization (Arhan, Demirer, Hozatlı, Orhangazi & Özbudun, 1998; Demir, 1998; Kongar, 2003; Mutlu, 2005), channeling effect of television (Akbulut & Balkaş, 2006; Arık & Solmaz; 2007; Balkaş, 2005; Bilgili & Akbulut, 2007; Çoban, 2007; Kaypakoğlu, 1999; Konukman, 2006; Taşkıran, 2005), encouraging consumption (Balkaş, 2005; Gün, Tüzel & Durmaz, 2005; Karaca, Pekyaman & Güney, 2007), degenerating and corrupting culture (Balkaş, 2005; Kongar, 2003), high regard for rating concerns (Baykal, 2007; Kayış, 2007; Serim, 2007), falsifying news reports (Bilgili & Akbulut, 2007; Can & Şimşek, 2005; Göksu & Eroğlu, 2006), compromising privacy (İrvan, 2003), and encouraging self-interest (Demir, 2006; Erdoğan, 2006). At this point media literacy and media literacy education gains great importance in order to make individuals more conscious and to eliminate negative effects of mass media.

Media literacy is a concept which first occurred with television and movies and then with the internet and which has resulted from students' need to evaluate the role of media in their lives (Badke, 2009). Television, radio, computers and the internet have entered classrooms and change the way that students learn step by step. Computers and the internet are quickly becoming our dominant cultural tools for searching, selecting, gathering, storing, and conveying knowledge (Covington, 2004; Jenkins, 2006; Kuiper, Volman, & Terwel, 2009). Increasing one's knowledge by using mass communication tools and media has both advantages and disadvantages. As we adopt the good components of this knowledge, we should also try to avoid the bad. The negative messages disseminating through various media technologies can be avoided by developing the skills to question, evaluate and analyze these messages. For this reason, it is of great importance for individuals to develop media literacy so that they can make the best use of the new technology and so that they can interpret and process all kinds of media messages (American Library Association, 1989; Enochsson, 2005; Thoman, 2003).

The concept of "Media Literacy," is also called "Media Education" or "Media Awareness" in the literature (Thoman & Jolls, 2008). According to the definition established by the National Leadership Conference on Media Literacy, media literacy is the ability to access, analyze, evaluate, and produce communication in a variety of forms like television, video, cinema, advertisements, internet and so on (Aufderheide, 1993). There are too many definitions and different opinions about media literacy in the literature.

The first systematic definition of media literacy was made in 1978 by Sirkka Minkinken as "Media literacy aims to improve skills in cognitive, ethical, philosophical and aesthetic issues" (Hobbs, 1998a: 122). İnceoğlu (2007b) reports that Minkkinen asserts that media literacy targets to develop skills at informative, ethical, philosophical and aesthetical aspects. As the media literacy covers a number of disciplines, it involves different descriptions and definitions. Meanwhile, this concept has also led to various approaches due to its content and coverage of a widespread application area.
Media literacy can be broadly defined as a combination of the various skills needed to search, select, analyse, evaluate, and communicate in the various forms of media (Considine, Horton, & Moorman, 2009; Enochsson, 2005; Kuiper, Volman, & Terwel, 2009). Media literacy refers to the understanding of media and the use of it as a source of information, entertainment, enrichment, growth, empowerment, and communication (Wan, 2006). Schaefer (2005) also pointed out that media literacy is usually conceptualized as a set of skills related to the production of a media message.

Covington (2004) advocates the notion that media literacy comprises critical viewing skills and the ability to regard, evaluate, and interpret content. Hobbs (1998b) draws attention of academicians and educators to two points in Media Literacy; the first one is the critical analysis of media messages and the second one is how an individual learns to create his/her own messages.

De Gaetano (2010) states that five basic characteristics can be observed in children and teenagers if they are cognizant of media literacy:

- Be conscious and make use of screen technology appropriately.
- Be able to criticize visual messages and cognizant of their emotional and cognitive effects.
- Be able to express the realities, ideas and well-structured opinions about media scenes.
- Be able to grasp the media production techniques like camera angles and lights so as to understand

how the messages affect individuals.

- Be able to use all forms of screen technology efficiently.

All studies and evaluations so far have revealed that children who are exposed to visual, audial and written media as vulnerable receivers should be made conscious of media from pre-school years onwards. Owing to being media literate, children will be able to receive the messages of mass media through a critical judgment and decode the messages of media as active individuals instead of being passive receivers (RTUK, 2007). Transforming individuals to media literate ones is only possible with media literacy education.

Media Literacy Education

The revolution in media and global communications in the last few decades has transformed the very basic foundations of knowledge and education. Global citizens of today and tomorrow need to be equipped with the necessary skills to both interpret and produce media texts (Hermida, 2009). The dissemination and production of knowledge and our notions of education are greatly affected from this revolution.

The process of forming an information society and using the information transferred by media accurately are among the main problems of 21st Century. Individuals in the society are heavily exposed to message overload by mass media. These messages can by no means be claimed to be impartial or objective. Being media literate has a crucial impact on solving these problems (İnan & Temur, 2012). The key reason for being a media literate is that the media fictionalizes what is real and it can reflect it with a scenario different from what it really is (Çetinkaya, 2008). Therefore we must be very careful and conscious in this process. The importance of media literacy stems from the necessity of the protection from the negative effects of the mass media and establishing a conscious interaction.

The uncontrolled, intensive and effective information through mass media especially affects kids and teens because they get the messages unconsciously without choosing. Moreover, television prevents children from exploring the world through their own experience. It, instead, provides them with an already-structured and fictionalized life (Ertürk & Gül 2006). Media Literacy aims to furnish children who are the most vulnerable to the effects of mass media with a skill to distinguish between fiction and reality. This course involves explaining how and why the media convey messages in certain ways so that children can be raised as conscious receivers who can look at the media from a critical perspective from primary school years (İnan & Temur, 2012). Kıncal and Kartal (2009) point out that individuals develop awareness of media and media messages and gain critical skills through media literacy education. They also add that media literate individuals question media texts and thus come up with their own media messages.

Educational experts discuss an educational process, “media literacy,” for individuals using mass media actively in order for them to be conscious media consumers. These experts emphasize the importance of providing children with the insight to use media (Ertürk & Gül, 2006; Goodman, 2003; Hobbs & Frost, 2003; Leistyna & Alper, 2007; Livingstone, 2008; Potter, 2005; Scharrer, 2002; Semali & Pailliotet, 1999; Singer & Singer, 1998; Thoman & Jolls, 2006; Torres & Mercado, 2006).

As media literacy is an important concept because of positive and negative effects of media on children and young adults, it became a significant issue in educational context. For this reason teachers have major role in the process of educating children about media literacy (Karaman & Karataş, 2009). Education and communication

experts are in favor of the fact that individuals should be able to take full advantage of mass media and use them consciously. In this context, while positioning media literacy into the education system, experts regarded it not only as a course, but also as a philosophy, and even a lifelong learning process (İnan & Temur, 2012). Wan and Gut (2008) states about importance of media literacy education:

Becoming literate in the new century means that both teachers and students need to understand the influence of media on our society, develop strategies to critically analyze media, become independent from the influence of media, and open their minds to embrace and experiment with new tools of teaching and learning provided by the information age. No child's education is complete without media literacy education and skills of the 21st century literacies.

The purpose of media literacy education in schools is to gain an ability of comprehending some of the strange features, needs and problems of media, and to guide students towards independent critical analyses of the roles of the media in today's and tomorrow's societies and to enable them to notice the various unavoidable dangers of manipulation and bias through the media (Bektaş, 2009).

Media literacy education entails teaching people "to decode, analyze, evaluate and produce communication in a variety of forms" (Aufderheide & Firestone, 1993; Carnegie Council, 1995). Many scholars and practitioners of media literacy education agree that it emphasizes (Hobbs, 2008): (1) a personal focus on accessing and using media and technology; (2) the process of critically analyzing and evaluating the content, form and contexts of media messages and media systems and institutions; and (3) the ability to compose or create messages using digital, visual and electronic tools for purposes of self-expression, communication and advocacy. Media literacy educators in United Kingdom, Australia, Canada and USA met around some common principles (İnceoğlu, 2007b):

- Media messages are carefully selected and constructed structures.
- There is a strong relationship between the way media presents the world to us and the way we perceive it.
- Media messages contain ideologies and values in their structures.
- Media messages are generated in economic, social, financial, historical and aesthetic contexts.
- Media messages allow people to understand the social reality.

Media literacy education started in 1970's with the emphasis of protecting children from the harmful effects of media. Later, media literacy moved to the understanding to focus on critical thinking. Media education has developed first in Great Britain, Australia, Canada, South Africa, and the United States. Then, a growing interest has started in other developed countries, like Netherlands, Russia and Italy. Media literacy is often one credit course, as well as part of the English curricula in Great Britain. Influenced by the developments in the world, Australia has studies on media literacy, and first text books were prepared during 1980's and 1990's. Media education is growing in the United States because of the increased emphasis on 21st century literacy, which now incorporates media and information literacy and emphasis on the social responsibilities of communication. Concrete courses and programs in media literacy continue to develop in the United States (Bektaş, 2009).

Media Literacy Education in Turkey and Prospective Teachers

There are some developments about media literacy education in Turkey with the cooperation of RTUK (Radio and Television Supreme Council) with MONE (Ministry of National Education). RTÜK and the Ministry of Education in cooperation started the 'Media Literacy' courses in five pilot cities (Ankara, İstanbul, İzmir, Adana

and Erzurum) in 2004 following the training of the 30 teachers. Media literacy education first started in five primary schools selected arbitrarily for testing purposes in 2006-2007 academic years. Media Literacy course started as an elective course in Turkey in 2007-2008 academic periods at 6th, 7th and 8th grades and still goes on. RTÜK officials mentioned that their intention is to make it an obligatory course (see the newspapers dated 27th June 2007), and also stressed the importance of parental education on different platforms (for example at the International Conference of Media Literacy, 24 November 2006, Ankara). RTÜK's media literacy program can be seen as part of the initiatives, such as TV ombudsmanship and intelligent signs, targeting self-regulation of the media. RTÜK aims to protect children and the young from harmful content; warn children and the young about the programs which 'contain violence, horror, sex and behaviors that can build negative examples' by a system of 'intelligent signs'. Intelligent sign system has four symbols (7+, 13+, 18+, general audience) showing the appropriateness of programs according to age groups and three symbols defining harmful content (violence/ horror, sex, behaviors which can lead to negative examples).

Media literacy course teaching program in Turkey was prepared in accordance with the constructivist approach. According to this approach, students will construct their own meaning by combining the information they have observed in far environments or immediate vicinity and the information they have acquired in education institutions, and thus will have gained new skills and values (RTÜK, 2007).
Hobbs (1994) reveals that teachers have the main responsibility in equipping children with media literacy and therefore they should be well-prepared for this mission through well-established prospective and in-service training. He says about the importance of media literacy education that: "Future of media literacy depends primarily on a long-termed, intensive and intellectual development in training of the teacher". Considine (2002) reveals in his research that teachers should be exposed to the developments in media literacy in both prospective and in-service period through workshops in order for teachers to conduct media literacy education efficiently.

At this point, there is a very significant question: "Who will be responsible for teaching the media literacy lessons?" The Ministry of Education assigned social science teachers to give these lessons. The main question is whether the social science teachers do have enough skill and knowledge to teach media literacy or not. Teaching media literacy requires a specific training on subjects like main structures of media, historical backgrounds of media, theories and effects of media and the methods for reading a text in terms of semiotic analyses, rhetoric and other related subjects (İnceoğlu, 2007b). Considering that the teachers who give the course didn't have media literacy education during prospective and in-service period, it becomes very essential to educate prospective teachers both in prospective and in-service period.

There are some studies emphasizing that prospective teachers should have media literacy education during their education process. Deveci & Çengelci (2008) suggested in their qualitative research on prospective teachers of social studies that all the prospective teachers should be media literate. They also suggested that prospective teachers can do such activities in their faculty to promote media literacy as preparing a news board, leaving newspapers on canteen tables.

In another research carried out to determine the attitudes of students towards media literacy course, it was found that the students didn't find the activities and methods of their media literacy teacher adequate and didn't like the way their teacher conducted the lesson (Elma, 2009). In this research, it was also stated that the students shared what they had learned in the lesson with their families and friends, which created positive effects on both the families and the friends.

Kıncal (2007) states in his research that media literacy develops critical thinking in individuals and enhances the skill of active participation. Thus, the power of giving response to media messages can be regarded as one of the indispensable components of media literacy. In the same research, however, Kıncal (2007) says that prospective teachers convey their reactions and criticism towards positive or negative messages in the media to relevant authorities at a very low level.

Haider & Dall (2004), while defining a media literate individual, emphasize that this individual should be able to evaluate media messages by getting them from different sources in different formats. They also add that an individual called media literate should follow the developments in media technologies, have information about their development history even at a basic level and have the skill to evaluate and analyze the manipulative messages of the media.

In the research done by İnceoğlu (2007a) in Turkey, the researcher could only access one of the pilot schools which is located in Istanbul among the five pilot schools, In order to achieve realistic results, in-depth interviews especially focusing on the key difficulties regarding teaching capability, content, methods and instruments used in this project. In addition, surveys were conducted to the 38 students of media literacy classes to determine the effects such as for example any positive changes on their behavior and or on their thinking style. The results of In-Depth Interviews with the teachers are in the following İnceoğlu (2007a): (1) According to findings of this research, both teachers believed in the necessity of implementation of media literacy course in the Turkish education curriculum. They said that children gained different perspectives through the lectures that support them to increase their ability to distinguish between reality and imagination. Teachers believe that this course encourages children to analyze the media in a critical way and learn to protect themselves of negative effects of media (considering TV, internet, newspapers as media) while eliminating ads, movie, magazines, books. (2) On the other hand, both teachers failed in defining the elements of media and functions of the media. (3) Surprisingly, both teachers didn't recommend any other book than the course book. They only suggested the official web site of RTÜK for children. They are also not aware of the difference between evaluation and media criticism. (4) When they were asked to make comments and suggestion about media literacy lesson in terms of increasing its efficiency, one of them said that lectures should generalize to other schools for the future but before this, teachers should take education and then teach the children. The other teacher said that in order to increase effectiveness of lectures it is necessary to link with media outlets and use technological apparatus otherwise it might be only a "read and explain" method. (5) When they were asked if they were interested in media before the lectures one of them said that she was interested in media just as the people in the street. Also she added that before the lectures she did not know the technical terms concerning the media and learned them while teaching students during the lessons. For instance she claimed that she had never heard the name and meaning of "fake event" before the lectures.(6) Both of them have not taken any media lessons during their education and they added that the Ministry of Education provided "in house training" course for social science teachers prior to this project only for a week.

Aim of the study

This study aims to analyze perceptions of prospective teachers about their media literacy competencies in terms of different variables. In this context, the effect of variables such as gender, age, department, having a computer, having an internet access and reading newspaper regularly about prospective teachers' media literacy competencies were explained.

METHOD

Model

This is a descriptive research in the survey model which tries to detect the current situation. According to Karasar (2000) scanning models are research approaches which aim to define a past or present situation.

Participants

Research group is consisted of 653 prospective teachers from Turkish, Primary School, Social Studies, Science, Mathematics and Preschool Teacher Training programs in 2012-2013 academic periods in Faculty of Education at Kastamonu University.

Data Collection Instrument

Data is collected by "Media Literacy Level Assessment Scale" which is developed by Karataş (2008). Data collection tool is composed of three parts: 5 questions to determine the socio-demographic characteristics of prospective teachers, 14 questions to demonstrate the relationship between the mass media and media literacy and 17questions to determine the prospective teachers' media literacy competencies. a five-point likert scale was used in order to determine media literacy (1 = Never, 2 = Rarely, 3 = Occasionally, 4 = Often, 5 = Always).

Validity and Reliability of the Scale

As a result of explanatory factor analysis, three factors were found: "being knowledgeable, being able to analyze and react, being able to judge and being aware of implicit messages". "Media Literacy Level Assessment Scale" which is composed of three factors and 17 items explained 42,5% of the total variance. Factor loads change between ,41 and ,74 (Karaman & Karataş, 2009).

Reliability coefficient (Cronbach Alpha) of the "Media Literacy Level Assessment Scale" which is composed of three factors and 17 items is ,84. Reliability coefficients (Cronbach Alpha) of the "Media Literacy Level Assessment Scale" factors were given in table 1 (Karaman & Karataş, 2009).

Table 1. Reliability coefficients (Cronbach Alpha) of the "Media Literacy Level Assessment Scale" factors (Karaman & Karataş, 2009).

Factors	Reliability coefficient (Cronbach Alpha)
Being knowledgeable	,72
Being able to analyze and react	,70
Being able to judge and being aware of implicit messages	,68

Reliability coefficient (Cronbach Alpha) of the "Media Literacy Level Determination Scale" for present research is ,85. Reliability coefficients (Cronbach Alpha) of the "Media Literacy Level Determination Scale" factors were given in table 2.

Table 2. Reliability coefficients (Cronbach Alpha) of the "Media Literacy Level Assessment Scale" factors

Factors	Reliability coefficient (Cronbach Alpha)
Being knowledgeable	,76
Being able to analyze and react	,66
Being able to judge and being aware of implicit messages	,59

Data analysis

The statistical package for the social sciences (SPSS) 16 program pack that is used in data analyses in social sciences was used for statistical analysis of the data collected by the surveys filled in correctly and fully according to the explanations in the frame of the general aims of the research. The frequency, percentage, arithmetical mean and standard deviation of the answers were calculated. Independent t-Test and One-Way ANOVA were performed to analyze the data.

FINDINGS

Arithmetical mean and standard deviation of the answers that prospective teachers give about their media literacy competencies were given in Table 3.

Table 3. Prospective teachers' media literacy competencies

Factors	$\overline{X}$	Ss
Being knowledgeable	3,98	,60
Being able to analyze and react	3,60	,64
Being able to judge and being aware of implicit messages	3,63	,69
Total	3,78	,54

When we analyze Table 3, it can be seen that the highest media literacy competencies of prospective teachers is in "being knowledgeable" factor ($\overline{X}$ =3.98); on the other hand the lowest media literacy competencies of prospective teachers is "being able to analyze and react" ($\overline{X}$ =3.60). The total arithmetical mean is found as 3.78 when we analyze media literacy competencies of prospective teachers generally. This result shows that media literacy competencies of prospective teachers is higher than average.

T-Test results of media literacy competencies of prospective teachers according to gender were given in Table 4.

Table 4. t-Test results of prospective teachers' media literacy competencies according to gender

Gender	N	$\overline{X}$	S	sd	t	p
Male	202	3,76	,56	321	,671	,503
Female	451	3,79	,45			

p<.05

When we analyze Table 4, it can be seen that there is no significant difference between prospective teachers' media literacy competencies and teachers' gender [$t_{(671)}$= ,671, p> ,05]. In other words media literacy competencies of male and female prospective teachers are similar.

t-Test results of prospective teachers' media literacy competencies according to age were given in Table 5.

Table 5. t-Test results of prospective teachers' media literacy competencies according to age

Age	N	$\overline{X}$	ss	sd	F	p	Meaning
17-19	215	3.77	.56				
20-22	403	3.78	.45	2	1.62	.198	-
23-26	35	3.93	.40	650			

p<.05

When we analyze Table 5, it can be seen that there is no significant difference between prospective teachers' media literacy competencies and teachers' ages [$F_{(2-650)}$=1,62, p> ,05]. In other words; prospective teachers' ages do not change prospective teachers' media literacy competencies significantly.

t-Test results of prospective teachers' media literacy competencies in terms of their having a computer were given in Table 6.

Table 6. t-Test results of prospective teachers' media literacy competencies in terms of their having a computer

			$\overline{X}$	**S**	sd	t	**p**
Having a computer	Evet	423	3,83	,47	651	3,29	,001
	Hayır	230	3,70	,51			

p<.05

It can be seen from Table 6 that 64,8% of prospective teachers (N=423) have a computer and 35,2% (N=230) of prospective teachers don't have a computer. When we analyze prospective teachers' media literacy competencies in terms of having a computer , significant difference is found between the ones who have a computer and the ones who don't have a computer[$t_{(651)}$= 3,29, p< ,05]. Prospective teachers' media literacy competencies who have a computer ($\overline{X}$ =3,83) is higher than the ones who don't have a computer ($\overline{X}$ =3,70).

t-Test results of prospective teachers' media literacy competencies in terms of their having an access to internet were given in Table 7.

Tablo 7. t-Test results of prospective teachers' media literacy competencies in terms of their having an access to internet

		N	$\overline{X}$	**S**	sd	t	p
Having an access to internet	Yes	316	3,80	,47	651	2,69	,028
	No	337	3,71	,51			

p<.05

It can be seen from Table 7 that % 48,4% of prospective teachers (N=316) have an access to internet computer and 51,6% (N=292) of prospective teachers don't have an access to internet. When we analyze prospective teachers' media literacy competencies in terms of having an access to internet, significant difference is found between the ones who have an access to internet and the ones who don't have an access to internet [$t_{(651)}$= 2,69, p< ,05]. Prospective teachers' media literacy competencies who have an access to internet ($\overline{X}$ =3,80) is higher than the ones who don't have an access to internet ($\overline{X}$ =3,71).

t-Test results of prospective teachers' media literacy competencies in terms of reading newspaper were given in Table 8.

Table 8. t-Test results of prospective teachers' media literacy competencies in terms of reading newspaper

		N	$\overline{X}$	S	sd	t	p
Reading newspaper	Yes	328	3,83	,50	651	2,31	0,21
	No	325	3,74	,48			

p<.05

When the Table 8 is analyzed, it is found that that % 50,2% of prospective teachers (N=328) read newspaper regularly and 49,8% (N=325) of prospective teachers don't read newspaper regularly. When we analyze prospective teachers' media literacy competencies in terms of reading newspaper, significant difference is found between the ones who read newspaper and the ones who don't read newspaper [$t_{(651)}$=2 ,31, p< ,05]. Prospective teachers' media literacy competencies who read newspaper ($\overline{X}$ =3,83) is higher than the ones who don't read newspaper ($\overline{X}$ =3,74).

ANOVA results of prospective teachers' media literacy competencies according to their department were given in Table 9.

Table 9. ANOVA results of prospective teachers' media literacy competencies according to their department

Department	N	$\overline{X}$	ss	sd	F	p	Meaning
1. Primary school teacher training program.	106	3,79	,54				
2. Turkish teacher training program.	107	3,88	,47				2-5
3. Social studies teacher training program.	110	3,92	,50	5	5.47	.00	2-6
4. Preschool teacher training program.	110	3,79	,44	647			3-5
5. Science teacher training program.	111	3,65	,41				3-6
6. Mathematics teacher training program.	109	3,66	,52				

p<.05

When we analyze Table 9, a significant difference is found between prospective teachers' media literacy competencies and their departments [$F_{(5-574)}$= 2,92, p< ,05]. In other words; teacher training programs of prospective teacher affect their media literacy competencies. According to TUKEY HSD result; there is a significant difference between prospective teachers' media literacy competencies who research at Turkish teacher training program ($\overline{X}$ =3.88) and both Science teacher training program ($\overline{X}$ =3.65) and Mathematics teacher training program (=3.66) . There is a significant difference between prospective teachers' media literacy competencies who research at Social studies training program ($\overline{X}$ =3.92) and both Science teacher training program ($\overline{X}$ =3.65). and Mathematics teacher training program ($\overline{X}$ =3.66). Prospective teachers' media literacy competencies who research at Social studies teacher training program is the highest; on the other hand; prospective teachers' media literacy competencies who research at Science teacher training program is the lowest. There is no significant difference between the other matches.

Discussion and Conclusion

When we analyze the findings, it can be seen that perceptions of pre-service teachers about their media literacy competencies is high. The highest media literacy competencies of prospective teachers is in "being knowledgeable" factor; on the other hand the lowest media literacy competencies of prospective teachers is "being able to analyze and react". This finding shows that pre-service teachers is aware of the messages that come from media and their competencies of evaluating this messages critically and competencies of directing themselves about the contents of the messages is high; however, pre-service teachers' competencies of analyzing contents of the messages and reacting to them and competencies of being aware of themselves in this process is a bit low. The total arithmetical mean is found as 3.78 when we analyze media literacy competencies of pre-service teachers generally. This result shows that media literacy competencies of pre-service teachers is higher than average. Research findings are similar with the research findings done by Karaman & Karataş (2009). According to the findings of this research, it was determined that the highest media literacy competencies of pre-service teachers is in "being knowledgeable" factor (=4,03); on the other hand the lowest media literacy competencies of pre-service teachers is "being able to analyze and react" (=3.57). The total arithmetical mean is found as 3.82 when we analyze media literacy competencies of pre-service teachers generally. Research findings are also similar with the research done by Ergün & Recepoğlu (2012). According to the findings of this research, it was found that the highest media literacy competencies of prospective teachers is in "being knowledgeable" factor (=4,01); on the other hand the lowest media literacy competencies of prospective teachers is "being able to analyze and react" (=3.62). The total arithmetical mean is found as 3,80 when we analyze prospective teachers' media literacy competencies generally. This result shows that prospective teachers' media literacy competencies is higher than average.

Perceptions of pre-service teachers about their media literacy competencies don't change significantly according to their gender. In other words, gender variable is not determinant factor on media literacy competencies of pre-service teachers. Research findings are similar with the research findings of the researches done by Som & Kurt (2012) and Ergün & Recepoğlu (2012). According to findings of these researches, it was found that media literacy competencies of pre-service teachers do not change according to gender.

Perceptions of pre-service teachers about their media literacy competencies don't change significantly according to their age. In other words, age variable is not determinant factor on media literacy competencies of pre-service teachers. Research findings are also similar with the research done by Ergün & Recepoğlu (2012). According to the findings of this research, it was determined that ages of pre-service teachers do not change prospective teachers' media literacy competencies significantly.

Perceptions of pre-service teachers about their media literacy competencies change significantly according to their departments. There is a significant difference between media literacy competencies of pre-service teachers who research at Turkish teacher training program and both Science teacher training program and Mathematics teacher training program. There is a significant difference between media literacy competencies of pre-service teachers who research at Social studies training program and both Science teacher training program and Mathematics teacher training program. Media literacy competencies of pre-service teachers who research at Turkish teacher training program is the highest; on the other hand; media literacy competencies of pre-service teachers who research at Science teacher training program is the lowest. Research findings are partly similar with the research done by Ergün & Recepoğlu (2012). According to the findings of this research, it was determined that teacher education programs of pre-service teacher affect their media literacy competencies significantly.

There is a significant difference between prospective teachers' media literacy competencies who study at Turkish teacher training program and Science teacher training program. Prospective teachers' media literacy competencies who study at Turkish teacher training program is the highest; on the other hand; prospective teachers' media literacy competencies who study at Science teacher training program is the lowest.

Having a computer affect perceptions of pre-service teachers about their media literacy competencies significantly. Media literacy competencies of pre-service teachers who have a computer is higher than the ones who don't have a computer. This finding show positive and significant effect of having a computer. Research findings are similar with the research findings of Karaman & Karataş (2009). According to this research. whether pre-service teachers have a computer or not change media literacy levels of pre-service teachers significantly. Media literacy competencies of pre-service teachers who have a computer (=3,85) is higher than the ones who don't have a computer (=3,72). Research findings are also similar with the research done by Ergün & Recepoğlu (2012). According to the findings of this research, significant difference was found between the ones who have a computer and the ones who don't have a computer. Prospective teachers' media literacy competencies who have a computer (=3,84) is higher than the ones who don't have a computer (=3,73).

Having an access to internet affect perceptions of pre-service teachers about their media literacy competencies significantly. Media literacy competencies of pre-service teachers who have an access to internet is higher than the ones who don't have an access to internet. This finding show positive and significant effect of having an access to internet. Research findings are similar with the research findings done by Karaman & Karataş (2009). According to research findings done by Karaman & Karataş (2009). Whether pre-service teachers have an access to internet or not change media literacy levels of pre-service teachers significantly. Media literacy competencies of pre-service teachers who have an access to internet (=3,88) is higher than the ones who don't have an access to internet (=3,76). Research findings are also similar with the research findings done by Som & Kurt (2012). According to research findings done by Som & Kurt (2012). Whether pre-service teachers have an access to internet change media literacy levels of pre-service teachers significantly. Media literacy competencies of pre-service teachers who have an access to internet (=65,85) is higher than the ones who don't have an access to internet (=63,82). Research findings aren't similar with the research done by Ergün & Recepoğlu (2012). According to the findings of this research, significant difference wasn't found between the ones who have an access to internet and the ones who don't have an access to internet. However, media literacy competencies of pre-service teachers who have an access to internet (=3,82) is higher than the ones who don't have an access to internet (=3,79).

Reading newspaper regularly affects perceptions of pre-service teachers about their media literacy competencies significantly. Media literacy competencies of pre-service teachers who read newspaper is higher than the ones who don't read newspaper. This finding show positive and significant effect of reading newspaper regularly. Research findings are similar with the research findings done by Karaman & Karataş (2009). According to research findings done by Karaman & Karataş (2009). Whether pre-service teachers read newspapers regularly or not change media literacy levels of pre-service teachers significantly. Media literacy competencies of pre-service teachers who read newspapers regularly (=3,88) is higher than the ones who don't read newspapers regularly (=3,74). Research findings aren't similar with the research done by Ergün & Recepoğlu (2012). According to the findings of this research, significant difference wasn't found between the ones who read newspaper and the ones who don't read newspaper. However, it was found that prospective teachers' media literacy competencies who read newspaper (=3,84) is higher than the ones who don't read newspaper (=3,78).

As a conclusion; it can be said that having the necessary media literacy competencies and awareness and taking

media literacy education is of great importance for pre-service teachers who will take part effectively in gaining media literacy to the students before starting teaching profession. In this context, training programs can be re-edited in faculties of education. Studies can be done to increase teachers and pre-service teachers' awareness of media literacy. Activities like seminars and programs can be organized for teachers and pre-service teachers.

Considering that the teachers who give the course didn't have media literacy education during pre-service and in-service period, it is essential to examine knowledge level of the pre-service teachers, their opinions and readiness about media Literacy. There is not much research carried out on media literacy in Turkey. Media literacy should be examined in terms of pre-service teachers who will have a big role especially in shaping future generations. "Media Literacy Level Assessment Scale" which is used in this research can be re-formed and its scope can be expanded. Different scales which can measure media literacy competencies of pre-service teachers can be improved and implemented to different research groups. Qualitative researches can be conducted with faculty members as well as pre-service teachers. Similar studies can be conducted in other faculties or higher education institutions in different fields.

References

Akbulut, N. T., & Balkas, E. (2006). Medyada dil kullanımı: Türkçemiz çırpınıyor. C. Bilgili (Ed.), *Medyada olmayanlar: Medya eleştirileri* (pp. 369-380). İstanbul: Beta.

Altun, A. (2009). *Türkiye'de medya okuryazarlığı.* Retrieved at 18.09.2012 from www.acikarsiv.gazi.edu.tr/index.php?Sayfa No=2.

American Library Association (1989). *Presidential committee in information literacy: Final report*. Retrieved at 24.05.2012 from http://www.ala.org/ala/acrl/acrlpubs/whitepapers/presidential.htm.

Arhan, F., Demirer, T., Hozatlı, U., Orhangazi, Ö., & Özbudun, S. (1998). *Medya eleştirisi ya da Hermes'i sorgulamak.* Ankara: Öteki.

Arık, B., & Solmaz, B. (2007). Kitle iletişim araçlarında gerçeğe bürünen kurgu: Orhan Pamuk edebiyat ödülü örneği. C. Bilgili, & N. T. Akbulut (Ed.). *Medya eleştirileri 2007: Gerçeğin dişindakiler* (pp. 233-257). İstanbul: Beta.

Aufderheide, P. (1993). C*onference report, national leadership conference on media literacy*, Washington, DC: Aspen Institute.

Aufderheide, P., & Firestone, C. (1993). *Media literacy: A report of the National Leadership Conference on Media Literacy.* Washington, DC: Communications and Society Program, Aspen Institute.

Balcı, F., & Gergin,N. (2008). Medya ve çocuk: Medyadaki şiddetin çocuklara etkisi. Y. G. İnceoğlu & N. Akıner. (Ed.), *Medya ve çocuk rehberi* (1.Baskı) (pp.145-170). Konya: Eğitim Kitabevi Yayınları.

Balkaş, E. E. (2005). Televizyon ve çocuk tüketiciler. C. Bilgili (Ed.). *Medya eleştirileri: Toplumsal etkiler* (pp. 255-272). İstanbul: Beta.

Badke, W. (2009). *Media, ICT, and information literacy.* Retrieved at 28.07.2012 from http://findarticles.com/p/articles/mi_hb3328/is_200909/ai_n39230800/.

Baykal, K. C. (2007). Radyo ve televizyonda yayın ilkelerinin ihlâli ile yaptırım uygulaması sorunları. *İletişim Kuram ve Araştırma Dergisi*, 25, 85-116.

Bektaş, M. Ç. (2009). Media literacy courses in faculties of communication in TRNC. Presented at World Conference on Educational Sciences 2009. *Procedia Social and Behavioral Sciences 1* (2009) 446–449.

Bennett, S., Maton, K., & Kervin, L. (2008). The digital natives debate: A critical review of the evidence. *British Journal of Educational Technology, 39* (5), 775-786.

Bilgili, C. (2006). *Medyada olmayanlar: Medya eleştirileri 2006.* İstanbul: Beta.

Bilgili, C., & Akbulut N. T. (Eds.). (2007). *Medya eleştirileri 2007: Gerçeğin dışındakiler*. İstanbul: Beta.

Cabra-Torres, F., & Marciales-Vivas, G. P. (2009). Myths, facts and research on 'digital natives': A review. *Universitas Psychologica, 8* (2), 323–338.

Can, A., & Şimşek, S. (2005). Medya ahlakını olumsuz etkileyen unsurlar ve bunlara karşı okuyucuların tepkisinin ölçülmesi. C. Bilgili (Ed.). *Medya eleştirileri: Toplumsal etkiler* (pp. 129-144). İstanbul: Beta.

Carnegie Council on Adolescent Development. (1995). *Great transitions: Preparing adolescents for a new century*. New York: Carnegie Corporation.

Considine, D. (2002). *Media Literacy Across The Curriculum.* www.medialit.org/reading_room/article551.html, (01.02.2010).

Considine, D., Horton, J., & Moorman, G. (2009). Teaching and reaching the millennial generation through media literacy. *Journal of Adolescent & Adult Literacy, 52* (6), 471-481.

Covington, W. G. (2004). Creativity in teaching media literacy. *International Journal of Instructional Media, 31* (2), 119-124.

Çelenk, S. (2005). *Televizyon, temsil, kültür. 90'lı yıllarda sosyokültürel iklim ve televizyon içerikleri.* Ankara: Ütopya.

Çetinkaya, S. (2008). *Bilinçli medya kullanıcıları yaratma sürecinde medya okuryazarlığının önemi.* Yayımlanmamış Yüksek Lisans Tezi. Ankara Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.

Çoban, S. (2007). Eleştirel bir bakışla kamu hizmeti yayıncılığı. C. Bilgili ve N. T. Akbulut (Eds.). *Medya eleştirileri 2007: Gerçeğin dişindakiler* (pp. 137-162). İstanbul: Beta.

Degaetano, G. (2010). *100 family media literacy activities.* Retrieved at 03.09.2012 from www.gloriadegaetano.com/html_articles/100family.html.

Demir, V. (1998). *Türkiye'de medya ve özdenetim*. İstanbul: İletişim.

Demir, V. (2006). *Medya etiği.* İstanbul: Beta.

Deveci, H., & Çengelci, T. (2008). Sosyal bilgiler öğretmen adaylarından medya okuryazarlığına bir bakış. *Yüzüncü Yıl Üniversitesi Eğitim Fakültesi Dergisi, 5* (2), 25-43.

Elma, C. (2009). İlköğretim 7. sınıf öğrencilerinin medya ve medya okuryazarlığı dersine ilişkin tutumları. *Ondokuz Mayıs Üniversitesi Eğitim Fakültesi Dergisi*, 27, 93-113.

Enochsson, A. (2005). The development of children's Web searching skills – A non-linear model. *Information Research, 11*(1), paper 240. Retrieved at 22.08.2012 from http://informationr.net/ir/11-1/paper240.html.

Erdoğan, İ. (2006). Medya ve etik eleştirel bir giriş. İletişim Kuram ve Araştırma Dergisi, 23, 1-26.

Ergün, M., & Recepoğlu, E. (2012). Öğretmen adaylarının medya okuryazarlık düzeylerinin incelenmesi. Paper preented at 21. Ulusal Eğitim Bilimleri Kongresi, 12-14 Eylül 2012, Marmara Üniversitesi, Atatürk Eğitim Fakültesi, İstanbul/Türkiye.

Ertürk, Y. D., & Gül, A. A. (2006). *Çocuğunuzu Televizyona Teslim Etmeyin Medya Okur Yazarı Olun.* Ankara: Nobel.

Goodman, S. (2003). *Teaching youth media: A critical guide to literacy, video production and social change.* New York: Teachers College Press.

Göksu, F. ve Eroğlu, B. (2006). Siyasal iletişim sürecinde etik sorunsalı. C. Bilgili (Ed.). *Medyada olmayanlar: medya eleştirileri 2006* (pp.83-114). İstanbul: Beta.

Gün, F. S., Tüzel, K. N., & Durmaz, B. Ö. (2005). Obezite sorunu ve çocuklara yönelik gıda ürünü reklamları. C. Bilgili (Ed.). *Medya eleştirileri: Toplumsal etkiler* (pp. 167-193). İstanbul: Beta.

Haider, A., & Dall, E. (2004). *Guideline for Media Literacy in Education*. European Center for Media Literacy Report, ECML.

Hermida, J. (2009). *The need for teaching media literacy at the university level: The case of legal education.* Retrieved at 14.08.2012 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id =1419248.

Hobbs, R. (1994). *Expanding the concept of literacy*, Media Literacy in the Information Age, Kubey, R. (Ed), New York Transaction.

Hobbs, R. (1998a). Medya okuryazarlığı hareketinde yedi büyük tartışma (Çeviren: Melike Türkân Bağlı). *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi*, (2004). 37 (1), 122-140.

Hobbs, R. (1998b). The seven great debates in the media literacy movement. Journal of Communication, 48 (1), 16-32.

Hobbs, R. (2008). *Approaches to instruction and teacher education in media literacy*. Retrieved at 11.05.2012 from http://academic.mediachina.net/article.php?id=5530.

Hobbs, R., & Frost, R. (2003). Measuring the acquisition of media-literacy skills. *Reading Research Quarterly*, 38(3), 330-355.

İnan, T., & Temur, T. (2012) Examining media literacy levels of pre-service teachers. *International Electronic Journal of Elementary Education, 4* (2), 269-285.

İrvan, S. (2003). Medya ve etik. S. Alankuş-Kural (Ed.) *Medya, etik ve hukuk* (pp. 33-61). İstanbul: IPS İletişim Vakfı Yay.

İnceoğlu,Y. (2007a). *Introduction of media literacy course in Turkey's curriculum.* Retrieved at 20.01.2013 from http://www2.mediamanual.at/themen/kompetenz/61Inceoglu-Introduction-of-Media-Literacy-Course-in-Turkeys-Curriculum.pdf

İnceoğlu, Y. (2007b). Medyayı doğru okumak. N. Türkoğlu & M. C. Şimşek. (Ed.). *Medya okuryazarlığı* (1. Baskı) (pp. 21-26). İstanbul: Kalemus Yayınları.

Jenkins, H. (2006). *Confronting the challenges of participatory culture: Media education of the 21st century*. Retrieved at 22.06.2012 from http://www.nwp.org/cs/public/print/resource/2713.

Karaca, Y., Pekyaman, A., & Güney, H. (2007). Ebeveynlerin televizyon reklam içeriklerinin çocuklar üzerindeki etkilerini etik açıdan algılamalarına yönelik bir araştırma. *Sosyal Bilimler Dergisi, 9* (2), 233-250.

Karaman, M. K., & Karataş, A. (2009). Media Literacy Levels of the Candidate Teachers. *Elementary Education Online, 8* (3), 798-808.

Karasar, N. (2000). *Bilimsel araştırma yöntemi* (10. Baskı). Ankara: Nobel Yayın Dağıtım.

Karataş, A. (2008). *Öğretmen adaylarının medya okuryazarlık düzeyleri.* Yayınlanmamış Yüksek Lisans Tezi. Afyon Kocatepe Üniversitesi, Afyon.

Kartal, O. Y. (2007). *Ortaöğretim 10. sınıf öğrencilerinin televizyon dizilerindeki mesajları algılamalarında medya okuryazarlığının etkisi.* Yayınlanmamış Yüksek Lisans Tezi, Çanakkale Onsekiz Mart Üniversitesi, Çanakkale.

Kayış, S. N. (2007). *Tanrım reytingimi koru.* İstanbul: Güncel Yayıncılık.

Kaypakoğlu, S. (1999). Küreselleşme ve medya. *Birikim Dergisi*, 117, 88-91.

Kellner, D., & Share J. (2005). Toward critical media literacy: Core concepts, debates, organizations, and policy. Discourse. *Studies in the Cultural Politics of Education, 26* (3), 369-386.

Kellner, D., & Share, J. (2007). Critical media literacy, democracy and the reconstruction of education. In D. Macedo, & S. R. Steinberg (Eds.), *Media literacy: A reader* (pp. 3-23). New York: Peter Lang.

Kıncal, R. Y. (2007). *Media literacy as a means of perceiving globalization*, ISA RC 47 Social Classes and Social Movements – Globalization, Conflicts and Experiences of Localities, University of Rome, la Sapienza, Rome.

Kıncal, R. Y., & Kartal, O. Y. (2009). Medya Okuryazarlığı Eğitimi. *Milli Eğitim Dergisi,* 181, 318-333.

Kongar, E. (2003). Yozlaşan medya ve yozlaşan Türkçe. İstanbul: Remzi Kitabevi.

Konukman, E. A. (2006). Medya ve kültür:Son dönem televizyon dizilerinin yaşam tarzı üzerindeki imgeleri. Yayınlanmamış yüksek lisans tezi, Gazi Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.

Kotaman, A., & Avcı, A. (2006). Gösteri toplumunda yarışma programları ve iletişim. C. Bilgili (Ed.). Medyada olmayanlar: Medya eleştirileri 2006 içinde (s. 73-82). İstanbul: Beta Basım Yayım Dağıtım A.Ş.

Kuiper, E., Volman, M., & Terwel, J. (2009). Developing web literacy in collaborative inquiry activities. Computers & Education, 52(3), 668-–680.

Leistyna, P., & Alper, L. (2007). Critical media literacy for the twenty-first centuries: Taking our entertainment seriously. In D. Macedo, & S. R. Steinberg (Eds.), *Media Literacy: A Reader* (pp. 54-85). New York: Peter Lang.

Liu, E. Z. F., & Chang, Y. F. (2010). Gender differences in usage, satisfaction, self-efficacy, and performance of blogging. *British Journal of Educational Technology, 41* (3), E39-E43.

Livingstone, S. (2008). Engaging with media—a matter of literacy? *Communication, Culture & Critique,* 1, 51-62.

Mutlu, E. (2005). *Globalleşme, popüler kültür ve medya*. Ankara: Ütopya Yayınevi.

Nalçaoğlu, H. (2003). Medya ve toplum ilişkisini anlamak üzere bir çerçeve. S. Alankuş (Ed.). *Medya ve toplum* (1. Baskı) içinde (s. 43-59). İstanbul: IPS İletişim Vakfı Yayınları.

Oxstrand, B. (2009). *Media literacy education - A discussion about media education in the western countries, Europe and Sweden.* Paper presented at the Nordmedia09 conference in Karlstad University, Sweden, 13-15.08.2009. Retrieved at 29.08.2012 from https://gupea.ub.gu.se/bitstream/2077/22007/1/gupea_2077_22007_1.pdf.

Potter, W. J. (2005). *Media literacy*. California: Sage Publications.

Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon, 9* (5), 1–6.

RTÜK. (2007). *İlköğretim Medya Okuryazarlığı Dersi Öğretmen El Kitabı, Yayın Danışmanı: M. Naci Bostancı*. Radyo ve Televizyon Üst Kurulu, Ankara.

Schaefer, D. J. (2005). *Media literacy and Singapore: Lessons from the Asia context.* Paper presented at a nondivisional workshop held at the meeting of the International Communication Association, New York.

Scharrer E. (2002). Making a case for media literacy in the curriculum: Outcomes and assessment. *Journal of Adolescent & Adult Literacy, 46* (4), 354-358.

Semali, L., & Pailliotet, A. W. (1999). Introduction: What is intermediality and why research it in U.S. classrooms? In L. Semali & A. W. Pailliotet (Eds). *Intermediality: The teachers' handbook of critical media literacy* (pp. 1-30). Colorado: Westview Press.

Serim, Ö. (2007). *Türk televizyon tarihi 1952 – 2006.* İstanbul: Epsilon Yayınları.

Singer, D. G., & Singer, J. L. (1998). Developing critical viewing skills and media literacy in children. *Annals of the American Academy of Political and Social Science,* 587, 164-179.

Som, S. & Kurt, A. A. (2012). Media literacy levels of students attending the department of computer education and instructional technologies. *Anadolu Journal of Educational Sciences International, 2* (1), 104-119.

Tapscott, D. (2009). *Grown up digital*. New York: McGraw-Hill.

Taşkıran, N. Ö. (2005). Televizyon reklamları: Göstergebilimsel çözümlemeler ve etik değerlendirmeleri. C. ilgili (Ed.). *Medya eleştirileri: Toplumsal etkiler* (pp. 223-254) İstanbul: Beta Basım Yayım Dağıtım A.Ş.

Thoman, E. (2003). Media literacy: A guided tour of the best resources for teaching. *The Clearing House, 76* (6), 278-283.

Thoman, E., & Jolls, T. (2006). *Literacy for the 21st century*. California: Center for Media Literacy.

Thoman, E. & Jolls, T. (2008). *21. Yüzyıl okuryazarlığı: Medya okuryazarlığına genel bir bakış ve sınıf içi etkinlikler*. Çeviri: Cevat Elma ve Alper Kesten (Eds.). Ankara: Ekinoks.

Tığlı, M. (2006). Sanat pazarlamasında bir mecra olarak televizyona düşen görevler. C. Bilgili (Ed.). Medyada olmayanlar: *Medya eleştirileri 2006* (pp. 65-72). İstanbul: Beta Basım Yayım Dağıtım A.Ş.

Torres, M., & Mercado, M. (2006). The need for critical media literacy ın teacher education core curricula.

Educational Studies, 39 (3), 260-282.

Volman, M. & Terwel, J. (2009). Developing Web literacy in collaborative inquiry activities. *Computers and Education, 52*, 668-680.

Wan, G. (2006). Integrating media literacy into the curriculum. *Academic Exchange Quarterly, 10* (3), 174.

Wan, G. & Gut, D. (2008). Roles of media and media literacy education: Lives of Chinese and American adolescents. *New Horizons in Education, 56 (*2), 28-42.

DESIRE AND APTITUDE FOR VETERINARY EDUCATION AMONG VETERINARY STUDENTS IN SUDAN

Adil Salim ELSHEIKH

adilelgarrai@yahoo.com

Mohamed Abdelsalam ABDALLA

salamaa2000@sustech.edu
Total Quality Management Center

Sudan University of Science and Technology

Abstract: This study was conducted to find out whether students who enrolled in veterinary education in Sudan have a desire in this type of education or not. Additionally the study is intended to remind experts in higher education in Sudan as well as veterinary educators to the seriousness of the negligence of desire, aptitude and humane attitude towards animals when admitting students to veterinary education. A survey instrument was used to assess whether undergraduates students of faculties of veterinary medicine of four universities in Sudan; namely Khartoum University, Sudan University of Science and technology, Bahri University and Butana University; have desire in veterinary education or not. The questionnaire is composed of two sections: Section I: focused on personal and general data of the study sample. Section II: contains the statements of the desire scale. The students were asked to rate 8 scenario statements according to the Likert five scale which included five levels: strongly agree, agree, neutral, do not agree, and strongly disagree. This questionnaire was distributed to a total number of 525 students and the number of recovered correctly filled questionnaires was 394 (75% recovery rate). The questionnaires' stability was tested according to the methods of Cronbach's alpha and the stabilities of all statements were above 86% (0.86). The consensuses of all the surveyed students on the statements were calculated according to the methods of Tastle et al. The results of this study confirmed without doubt that the Sudanese veterinary students have a weak desire in veterinary education and the females have a significantly ($p<0.05$) weaker desire compared to male. In conclusion veterinary students expressed weak desire and aptitude towards the discipline they took as shown by the weak consensus on the desirability statements. Therefore it is recommended that when admitting students to veterinary education the desire, aptitude and the humane attitude towards animals must be taken as additional prerequisites.

Keywords: Aptitude, desire, humane attitude, veterinary education.

1. Introduction

The problem of veterinary profession in Sudan stems from the entrance requirements and selection system of the university. Although the students choose certain colleges when applying to the universities, students are selected for veterinary medicine based solely on the percentage they achieved in high school certificate (HSC) exams with no prerequisites of interest or aptitude. Desire in any profession is a good motive for the student to complete the college he attends. A person with desire to be a veterinarian in future can make his dreams reality. Certainly if one has above average intelligence, supportive and financially secure environment without desire he cannot achieve his goals (Allen, 1999). Many college students begin their college careers with only the vaguest notion of why they have done so (Tinto, 1987). The educators' conundrum for decades is what motivates students to stay in or drop out of college. Tinto (1996) reports that over half (57%) of all dropouts from four-year institutions leave before the start of their second year and that 40% of all students in America who start at a four year college fail to earn a degree. These studies confirmed without any doubt that the desire in any program is very important for future success in college and profession.

A number of recent studies have suggested that experiences of interactions with animals, especially during childhood, are associated with the development of long-term animal-related preferences and attitudes later in life (Ascione, 1993; Bjerke et al. 2001, Serpell, 2004). Children who like animals in their childhood will

develop more humane attitudes towards animals when become adult (Miura et al. 2002; Paul and Serpell, 1993). Studies have shown that a majority of prospective veterinarians are drawn to the profession by a pre-existing interest in, and affection for, animals (Heath et al. 1996). A survey on first- and fourth year veterinary students found that 96% had previously owned dogs and/or cats a much higher rate of ownership compared to general population (Shurtleff et al. 1983). The affection of animals and positive interactions with companion animals in childhood and adolescence paved the road for many students to choose veterinary medicine as a career. These findings state clearly that the desire in veterinary profession stems from childhood with the positive interactions with animals.

Therefore, the main objective of the current study was to assess whether students who undertook veterinary education in Sudan have desire in such education or not. Furthermore the study is intended to remind experts in higher education in Sudan as well as veterinary educators to the seriousness of the negligence of desire, aptitude and humane attitude towards animals when admitting students to veterinary education.

2. Methodology

A survey instrument (questionnaire) was used to assess whether undergraduates' students of faculties of veterinary medicine of four universities in Sudan; namely Khartoum University, Sudan University, Bahri University and Butana University have desire in veterinary education or not. The questionnaire is composed of two sections: Section I: focused on personal and general data of the study sample. Section II: contains the statements of the desire scale. The students were asked to rate 8 scenario statements (Table 1) according to the Likert five scale (Likert 1932) which includes five levels: strongly agree (SA), agree (A), neutral (N), do not agree, (DA) and strongly disagree (SD). This questionnaire was distributed to a total number of 525 students and the number of recovered correctly filled questionnaires is 394 (75% recovery rate). The questionnaires' stability was tested according to the methods of Cronbach's alpha and the stabilities of all statements (Table 1) were above 86% (0.86). The consensuses of all the surveyed subjects on the statements were calculated according to the method of Tastle et al. (2005 a, b and 2007). Levels of significance among group were determined with Chi ×2. Probabilities of $p<0.05$ were considered statistically significant.

Table (1) Scenario statements and data reliability (Cronbach's α)

Scenario statements	Cronbach's α
1. I have desire in veterinary medicine	0.87
2. Influenced by a friend studied veterinary medicine	0.86
3. Influenced by a veterinarian in the family	0.86
4. I applied according to parents desire	0.86
5. The faculty has an attractive program	0.86
6. I like to get a university degree only	0.87
7. I like to get a degree that qualify me to work only	0.87
8. I applied according to my high school exam percentage	0.87

3. Demographic characteristics of the surveyed students

Table (2) shows the detailed traits of students surveyed. The number of veterinary students who participated in this study was 394. The number of students surveyed from faculty of veterinary medicine, University of Khartoum was 158 (40.1%); those from faculty of veterinary medicine, University of Sudan were 65(16.5%); those from the faculty of Veterinary Medicine University of Bahri were 98(24.9%) and those from faculty of veterinary medicine university of Butana were 73 (18.5%). The number of male students' survey in all faculties was 186 (47.2%) and that of female students was 208 (52.8%). Students whose age at time of admission is in the age group of 16-17 years were 50 (12.9%), those of 18-19 years of age were 227 (58.5%) and those of 20 years and above were 111 (28.6%). Those surveyed from the 1st level were 90 (22.8%), 2nd level 58 (14.7%), 3rd level, 92 (23.4%), 4th level 66 (16.8%) and those of the 5th level were 88 (22.3%).

Table (2). Demographic characteristics of the surveyed students.

	Faculty of veterinary medicine attended				
	Khartoum	Sudan	Bahri	Butana	Total
1. Students' number	158 (40.1%)	65 (16.5%)	98 (24.9%)	73 (18.5%)	394 (100%)
2. Gender					
Male	045 (24.2%)	28 (15.1%)	40 (21.5%)	73 (39.2%)	186 (47.2%)
Female	113 (54.3%)	37 (17.8%)	58 (27.9%)	00(0.00%)	2008 (52.8%)
2. Age groups					
16-17	22 (44.0%)	11 (22.0%)	11 (22.0%)	06 (12.0%)	050 (12.9%)
18-19	103 (45.4%	44 (19.4%)	54 (23.8%)	26 (11.5%)	227 (58.5%)
20-and above	27 (24.3%)	10 (9.0%)	33 (29.7%)	41 (36.9%)	111 (28.6%)
3. Levels					
1st	30 (33.3%)	16 (17.8%)	35 (38.9%)	09 (10.0%)	90 (22.8%)
2 nd	17 (29.3%)	13 (22.4%)	13 (22.4%)	15 (25.9%)	58 (14.7%)
3 rd	39 (42.4%)	11 (12.0%)	12 (13.0%)	30 (32.6%)	92 (23.4%)
4 th	20 (30.3%)	09 (13.6%)	20 (30.3%)	17 (25.8%)	66 (16.8%)
5 th	52(59.1%)	09 (13.6%)	18 (20.5%)	02 (2.30%)	88 (22.3%)

4. Results

4. 1. Have desire in veterinary medicine

The overall consensus (CONS) of the veterinary undergraduate students of the aforementioned faculties on desire in veterinary education is 0.353 with strength consensus (sCONS) of about 60%. As in table (3) the overall number of students who strongly agree to this satement is 123 (31.2%%), those who agree 81 (20.6%), neutrals 54 (6.9%), those who disagreed are 62 (15.7%) and those who strongly disagree are 74 (18.8%). Furthermore the disire significantely ($p<0.05$) varies with gender (Fig. 1). The desire among males is heihger than females.

Table (3). Tally of attitude of the surveyed students towards veterinary medicine (I have desire in veterinary medicine)

Linker's Attributes	SA	A	N	D	SD	Total	CONS	sCONS
Faculty of Veterinary Medicine University of Khartoum	31	43	29	25	30	158	0.428	58%
Faculty of Veterinary Medicine University of Sudan	17	11	7	13	17	65	0.325	52%
Faculty of Veterinary Medicine Bahri university	34	13	12	17	22	98	0.294	58%
Faculty of Veterinary Medicine Butana university	41	14	6	7	5	73	0.493	79%
Overall	123	81	54	62	74	394	0.353	60%

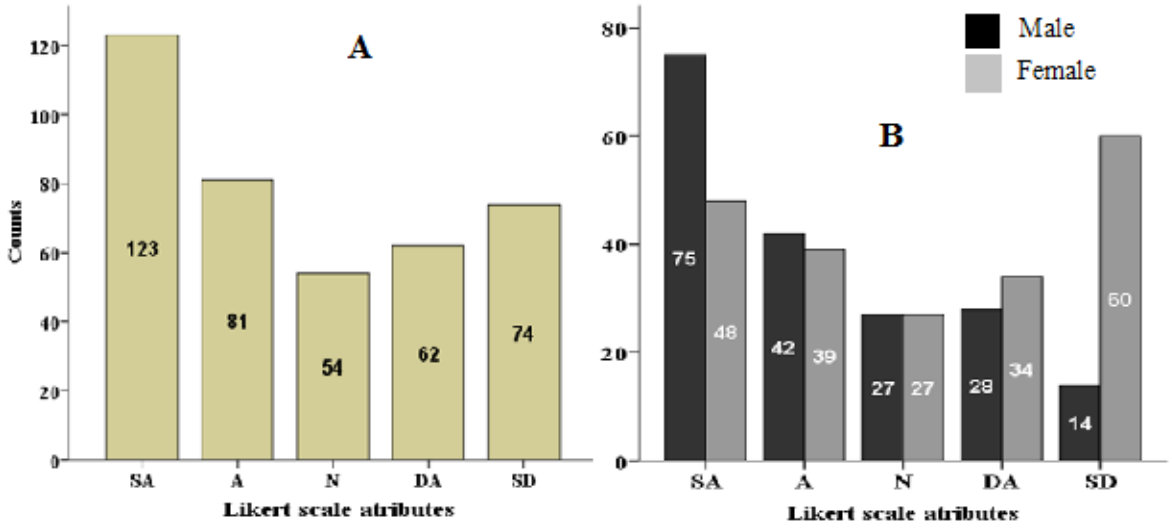

Fig. (1) Tally distribution for students' desire for veterinary medicine. A: overall desire, B: effect of gender on desire.

4. 2. Influenced by a friend who studied veterinary medicine

A significantly high ($p<0.001$) number of the students surveyed disagreed to this statement. As in fig. (2) the overall number of students who strongly agree to this satement is 56 (14.4%), those who agree 53 (13.6%), neutral 27 (6.9%) and those who disagreed 74 (19%) and those who strongly disagree are 180 (46.2%). Consequently the overall CONS and sCONS are low (0.359; 36%; respectively).

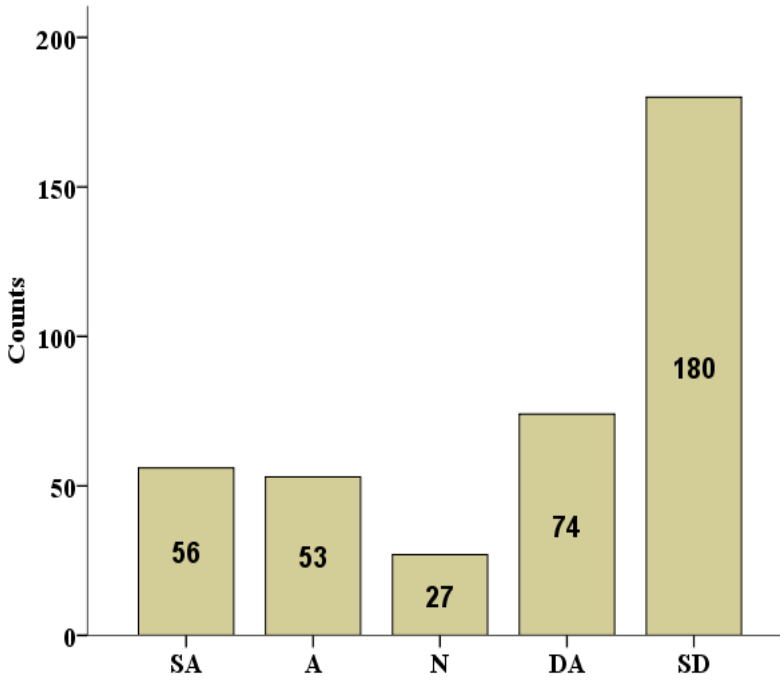

Fig. (2) Frequency distribution of students' answers for the statement "Influence by a friend who studied veterinary medicine".

4. 3. Influenced by a veterinarian in the family

A crucially high ($p<0.001$) number of the students surveyed disagreed to this statement. Fig. 3 shows that the overall number of students who strongly agree to this satement is 74 (18.9%), those who agree 44 (11.3%), neutral 35 (8.9%), who disagreed 70 (17.9%) and those who strongly disagree are 168 (43%). Consequently the overall CONS and sCONS are low (0.3148; 39%; respectively).

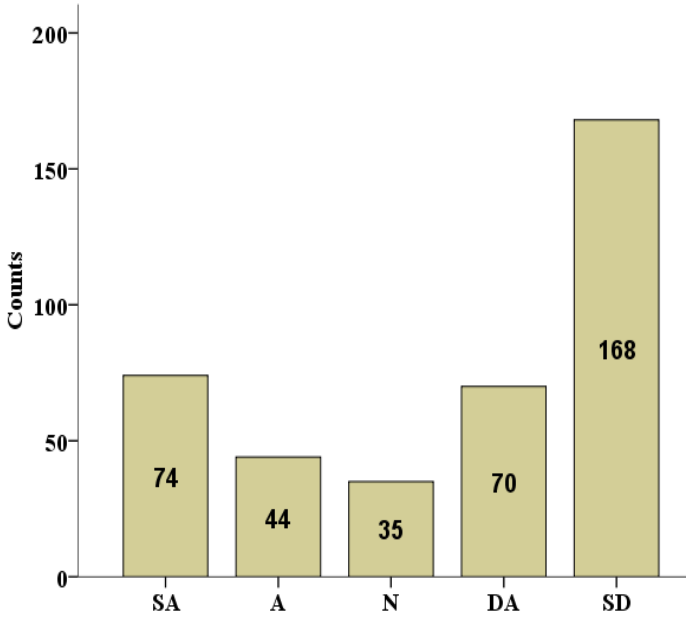

Fig. (3) Frequency distribution of students' answers for the statement "Influence by a veterinarian in the family".

4. 4. I applied according to parents' desire

A significantly high ($p<0.001$) number of the students surveyed disagreed to this statement. As in fig. 4 the overall number of students who strongly agree to this satement is 82 (21%), those who agree 44 (11%), neutral 40 (10%), who disagreed 65 (17%) and those who strongly disagree are 158 (41%). Thus the overall CONS and sCONS on this satement are low (0.298 ;41%; respectively).

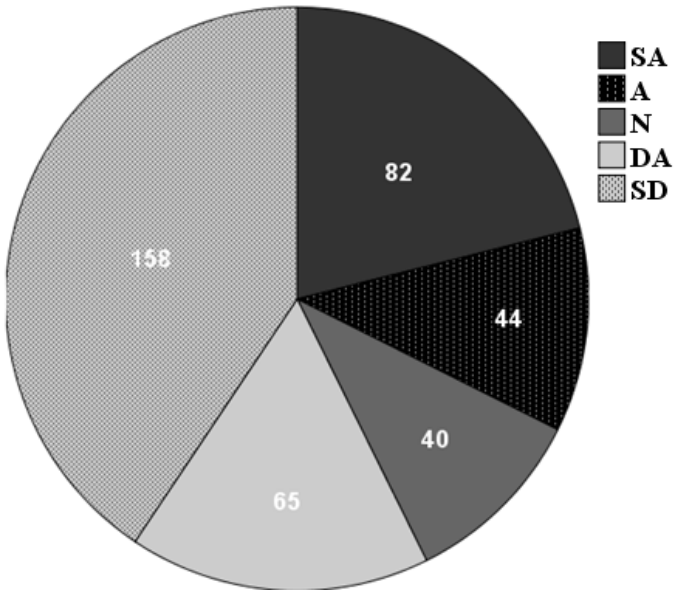

Fig. (4) Frequency distribution of students' answers for the statement "I applied according to parents' desire".

4. 5. The faculty has an attractive program

As in table (4) and fig. 5 about 17% (n=66) of the surveyed students who answered this statement strongly agreed to this statement, 15% (n=60) agreed, 18% (n=70) neutral, 16% (n=62) disagreed and those who strongly disagreed with this statement were 34% (n=134). The overall sCNS is low (44%) and it is a negative consensus.

Table 4) Opinion of students on faculties programs

Faculties	SA	A	N	D	SD	Total
Khartoum	19 (12%)	28 (18%)	33 (21%)	31(20%)	45 (29%)	156
Sudan	13 (20%)	11 (17%)	7 (11%)	9 (14%)	25 (38%)	65
Bahri	26 (27%)	11(11%)	21(21%)	5 (5%)	35 (36%)	98
Butana	8 (11%)	10 (14%)	9 (12%)	17 (23%)	29 (40%)	73
Total	66 (17%)	60 (15%)	70(18%)	62 (16%)	134(34%)	392

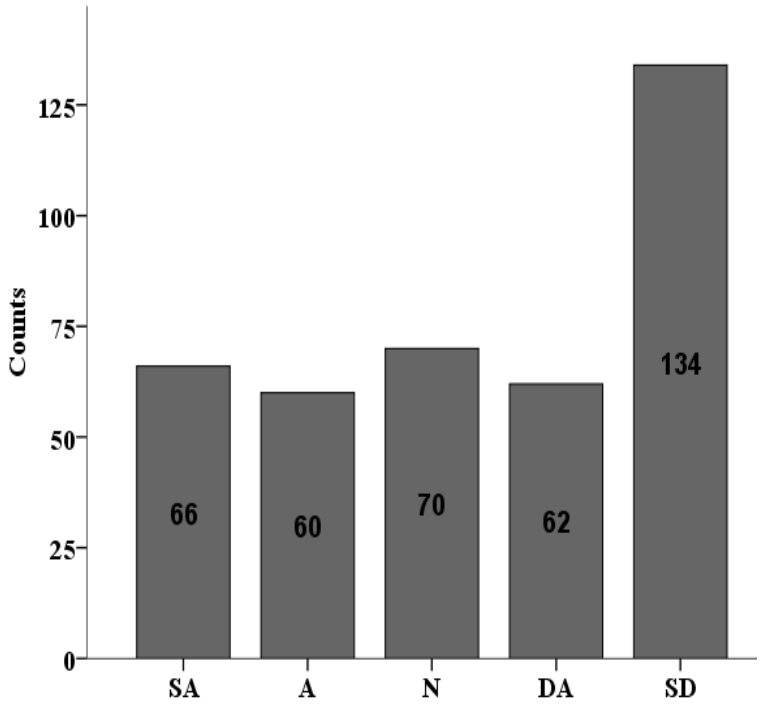

Fig. (5) Distribution of students' answers for the statement "The faculty has an attractive program".

4. 6. I like to get a university degree only

As in table 5 and fig. 6 about 22 7.9% (n=31) of the surveyed students who answered this statement strongly agreed to this statement, 6.4% (n=25) agreed, 11.3% (n=44) neutral, 15.6% (n=61) disagreed and those who strongly disagreed with this statement were 58.7% (n=229). The same table shows the distribution in each faculty. The overall sCONS is low (24%) and it is a negative consensus.

Table (5) Tally of attitude of the surveyed students (I like to get a university degree only)

Faculty	SA	A	N	DA	SD	Total
Khartoum	10 (6.5%)	11 (7.1%)	12 (7.8%)	25 (16.2%)	96 (62.3%)	154(100.0%)
Sudan	5 (7.7%)	3 (4.6%)	8 (12.3%)	10 (15.4%)	39 (60.0%)	65 (100.0%)
Bahari	8 (8.2%)	5 (5.1%)	14 (14.3%)	12(12.2%)	59 (60.2%)	98 (100.0%)
Butana	8 (11.0%)	6 (8.2%)	10 (13.7%)	14 (19.2%)	35 (47.9%)	73 (100.0%)
Total	31 (7.9%)	25 (6.4%)	44 (11.3%)	61 (15.6%)	229 (58.7%)	390 (100.0%)

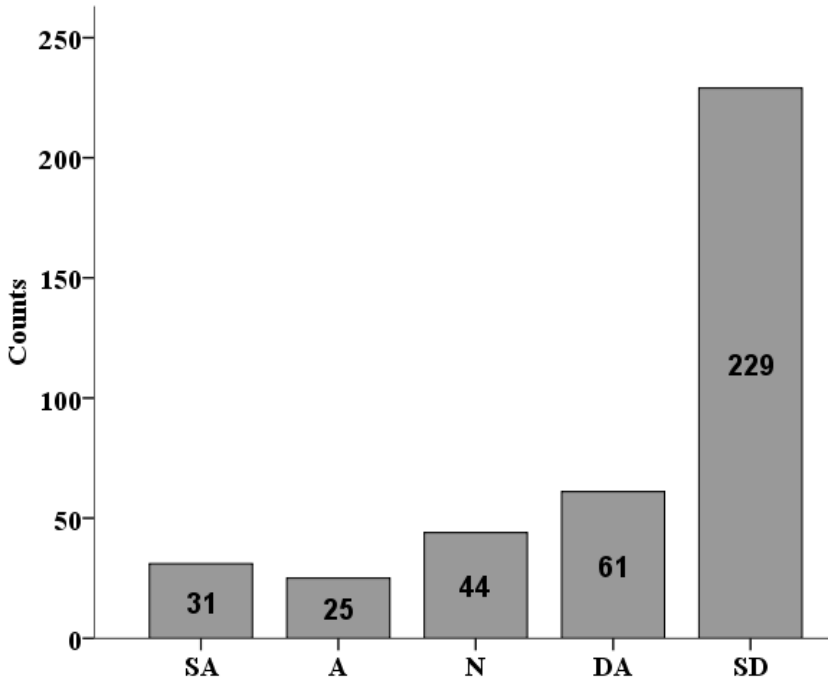

Fig. (6) Frequency distribution of students' answers for the statement "I like to get a university degree only"

4.7. I like to get a degree that qualify me to work only

Of the surveyed students who answered this statement those who strongly agreed to this statement 55 (14.1%), agreed 31 (7.9%); neutrals 40 (10.2%), disagreed 73 (18.7%) and those who strongly disagreed with this statement were 192 (49.1%). The same table shows the distribution in each faculty. The overall sCONS is low (32%) and it is a negative consensus (Table 6 & fig. 7).

Table (6) Tally of the students surveyed for the statement "I like to get a degree that qualifies me to work only"

Faculty	SA	A	N	D	SD	Total
Khartoum	18 (11.6%)	15 (9.7%)	18 (11.6%)	28 (18.1%)	76 (49.0%)	155 (100.0%)
Sudan	12 (18.5%)	3 (4.6%)	6 (9.2%)	19 (29.2%)	25 (38.5%)	65 (100.0%)
Bahari	14 (14.3%)	6 (6.1%)	12 (12.2%)	16 (16.3%)	50 (51.0%)	98 (100.0%)
Butana	11 (15.1%)	7 (9.6%)	4 (5.5%)	10 (13.7%)	41 (56.2%)	73 (100.0%)
Total	55 (14.1%)	31 (7.9%)	40 (10.2%)	73 (18.7%)	192 (49.1%)	391 (100.0%)

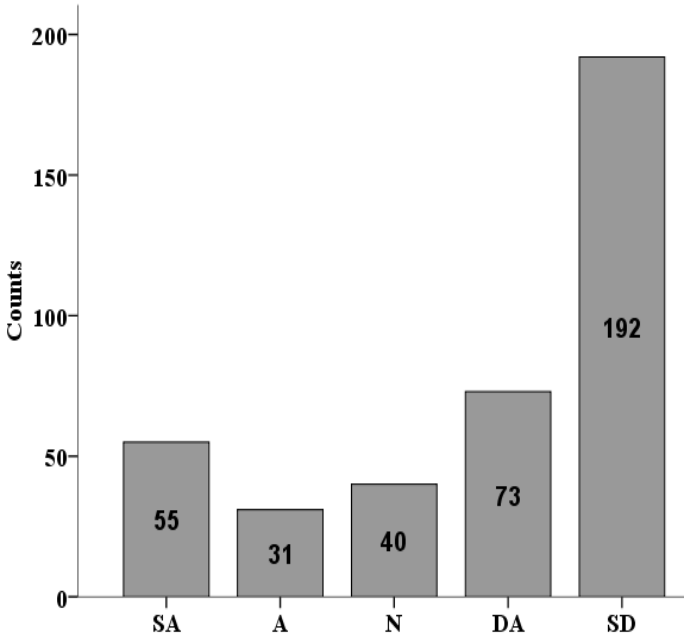

Fig. (7) Frequency distribution of students' answers for the statement "I like to get a degree that qualifies me to work only".

4. 8. I applied according to my high school exam percentage

As in table (7) and fig 8 about 40% of the surveyed students (n=156) strongly agreed to this statement; 19.7% (n=77) agreed; 9.7% neutrals (n=38); 7.4% disagreed (n=29) and 23.1% strongly disagreed (n=90). The overall sCNS is high (64%) and it is a positive consensus.

Table (7). Distribution of students' answers for the statement "I applied according to my high school exam percentage"

Faculties	SA	A	N	D	SD	Total
Khartoum	62 (40.3%)	38 (24.7%)	15 (9.7%)	7 (4.5%)	32 (20.8%)	154 (100.0%)
Sudan	28 (43.1%)	14 (21.5%)	8 (12.3%)	8 (12.3%)	7 (10.8%)	65 (100.0%)
Bahri	46 (46.9%)	15 (15.3%)	7 (7.1%)	9 (9.2%)	21 (21.4%)	98 (100.0%)
Butana	20 (27.4%)	10 (13.7%)	8 (11.0%)	5 (6.8%)	30 (41.1%)	73 (100.0%)
Total	156 (40.0%)	77 (19.7%)	38(9.7%)	29 (7.4%)	90 (23.1%)	390 (100.0%)

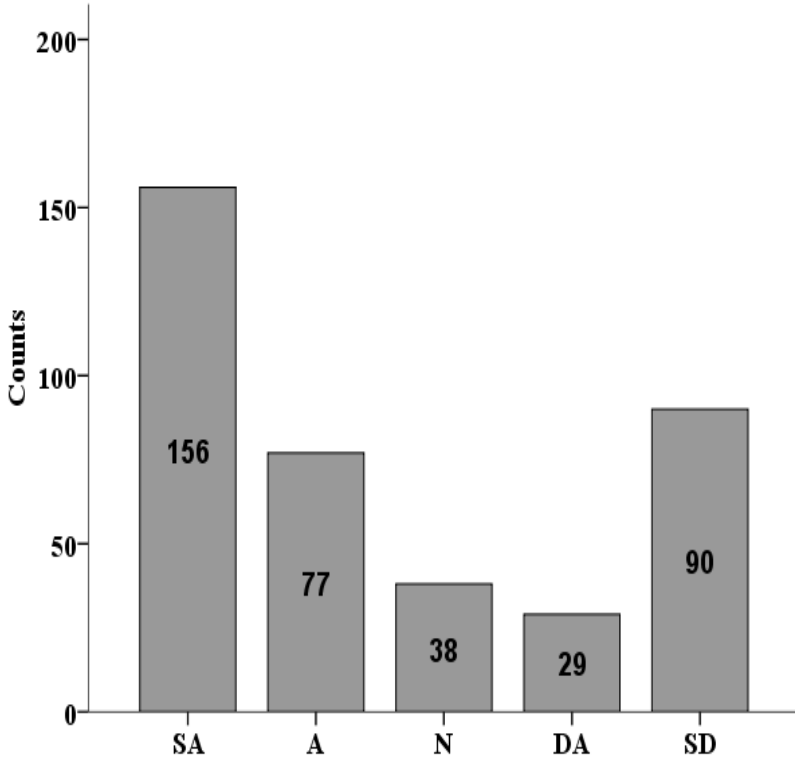

Fig. (8) Frequency distribution of students' answers for the statement "I applied according to my HSC%".

5. Discussion

This study demonstrated clearly that the veterinary students took their discipline without desire and the majority of them enrolled in veterinary education according to their HSC exam percentages. Furthermore, the desire among males is higher than females. Desire in any profession is a good motive for the student to complete the college he attends and no one disagrees on its importance. Any person with unruly desire to be a veterinarian in future he will certainly achieve his dream. It is well known that an above average intelligence person with supportive and financially secure environment if he lacks desideratum he cannot realize his goals (Allen, 1999). Worldwide there are many students who joined a certain college with only the vaguest notion of why they have chosen this career (Tinto, 1987). What motivates students to stay in or leave the college that accepted them is perplexing issue to many educators for decades. More than 50% of the students in American in four years institutions leave the school before their second year and 40% fail to get a degree (Tinto, 1996). These studies confirmed without any doubt that the desire in any program is very important for future success

in college and in profession. The students who undertake the veterinary education in Sudan usually they lack the desire in this type of education. They often choose this type of education when they have fewer opportunities to take medical education. The lack of desire in veterinary profession casts a dark shadow on the future and the quality of those who graduate from these colleges and consequently affects the reputation of the job. A number of recent studies have suggested that experiences of interactions with animals, especially during childhood, are associated with the development of long-term animal-related preferences and attitudes later in life (Ascione, 1993; Bjerke et al. 2001, Serpell, 2005). Children who love animals in their childhood grow up and they have more humane attitudes towards animals when they become adults (Miura et al. 2002; Paul and Serpell, 1993). Studies have shown that a majority of prospective veterinarians are drawn to the profession by a pre-existing interest in, and affection for animals (Heath et al. 1996). A survey on first- and fourth year veterinary students found that 96% had previously owned dogs and/or cats a much higher rate of ownership compared to general population (Shurtleff et al. 1983). The affection of animals and positive interactions with companion animals in childhood and adolescence paved the road for many students to choose veterinary medicine as a career. These findings state clearly that the desire in veterinary profession stems from childhood with the positive interactions with animals. The problem of veterinary profession in Sudan stems from the entrance requirements and admission policies adopted. Although in Sudan the students choose certain colleges when applying to universities, students are recruited for veterinary medicine based solely on the percentage they achieved in HSC with no prerequisites of interest, aptitude, known humane attitude towards animals and affection. Many students enrolled in veterinary education are influenced by many factors such as parents' desire, failure to take medical education and consequently they choose the veterinary education according to the HSC percent they achieved. Recently the female population in veterinary education is rising. This situation foretells a poor future veterinary profession because according to the findings of this study the majority of students usually take the veterinary education without desire particularly the females who currently outnumber the males.

In conclusion Sudanese students who enroll in veterinary education lack the desire in veterinary education and often they choose veterinary education when the options they are interested in are not available and/or the HSC percent they achieved does not qualify them to enter the colleges of their choice. Therefore it is recommended that when admitting students to veterinary education the desire, aptitude and the humane attitude towards animals, must be taken as influential variables in addition to the admission requirements. Furthermore parents must be educated to leave their children to choose the specialization they wish to study.

References

Allen, D. 1999. Desire to finish college: An empirical link between motivation and persistence. Research in Higher Education, 40(40):461-485.

Ascione, F. R. 1993. Children Who Are Cruel to Animals: A Review of Research and Implications for Developmental Psychopathology. Anthrozoo, 6(4): 226-247.

Bjerke, T.; Kaltenborn, B. P. and Odegardstuen, T. S. 2001. Animal-related activities and appreciation of animals among children and adolescents. Anthrozoos, 14:86–94.

Heath, T. J. and Lanyon A. A.1996. Longitudinal study of veterinary students and recent graduates: 4. Gender issues. Aust. Vet. J. 74:305–308.

Likert, R. 1932. A technique for the measurement of attitudes. Archives of Psychology 140: 5-55.

Miura, A.; Bradshaw, J. W. S.; Tanida, H. 2002. Childhood experiences and attitudes towards animal issues: A comparison of young adults in Japan and the UK. Animal Welfare, 11:437–448.

Paul, E. S. and Serpell, J. A. 1993. Childhood pet keeping and humane attitudes in young adulthood. Animal Welfare, 2:321–337.

Serpell, J. A. 2005. Factors Influencing Veterinary Students' Career Choices and Attitudes to Animals. JVME 32(4):491-496.

Shurtleff, R. S.; Grant, P.; Zeglen, M. E.; McCulloch, W. F and Bustad, L. K. 1983. A nationwide study of veterinary students' attitudes on ethical issues. J Vet Med Ed, 9:93–96, 1983.

Tastle , J. M and Tastle, W. J. 2005 (b). Extending the consensus measure: analyzing ordinal data with respect to extrema. Proc ISECON 2005, v22 (Columbus OH): §2322. Online article.

Tastle, W. J.; and Wierman, M. J. 2007. Consensus and dissention: A measure of ordinal dispersion. Internat. J. Approx. Reason., 45: 531–545

Tastle, W. J.; Russell, J. and Wierman, M. J. 2005 (a). A new measure to analyze student performance using the Likert scale. Proceedings ISECON, Vol: 22, (Columbus OH), pp 1-7. (available online).

Tinto, V. 1987. Leaving College: Rethinking the Causes and Cures of Student Attrition. Chicago, IL: The University of Chicago Press.

Tinto, V. 1996. Reconstructing the first year of college. Planning for Higher Education, 25: 1-6.

IDENTIFICATION OF THE ELEMENTS OF RISK MANAGEMENT PRACTICES SPORTS AT TEACHER EDUCATION INSTITUTE

Ahmad bin Esa
Universiti Tun Hussin Onn Malaysia
(ahmad@uthm.edu.my)

Fatimah Mustaffa
IPGK Perempuan Melayu.
(fatimah.mustaffa@ipgkpm.edu.my)

Abstract: Risk management is important in the sports industry to provide and ensure a safe environment for all sports programs. Sports risk management aims to control, prevent and minimize the risk of accidents and injuries. Developed countries such as Australia and the United Kingdom have adopted a standard model of risk management. It indicates that an organization that offers or implements programs or sports activities, needs a coach or instructor with basic theoretical knowledge and a clear philosophy, is skilled and has the characteristics of a proper attitude to handle the program. This study was conducted to determine the Elements of Identification of Risk Management Practices for Sport (EIRMPS) Coach Institute of Teacher Education (ITE) of the perception of athletes. This study focuses on the dominant EIRMPS. This review had a total of 120 ITE athlete respondents who are students at the Institute of Teacher Education, comprising 67 male athletes and 53 female athletes. The instrument was a questionnaire and a pilot study data analysis was conducted using the Rasch measurement model for the purposes of carrying out four diagnosis functionality check items. The findings of the pilot analysis indicated the Cronbach alpha reliability and trustworthiness of individuals is 0.92 (very good) and the reliability is 0.72, indicating a good level. The results showed EIRMPS ITE coach at a high level and is the dominant element of liability and tort; equipment and facilities; and demographic coach.
Keywords: Practice Manager, Risk Management and Sport, and the Rasch model.

1.0 INTRODUCTION

Developed countries have adopted a standard model of risk management. Among them, since 1999 Australia has established a standard model of risk management, i.e. Guidelines for the Safe Conduct of Sport and Physical Activity in Schools (Sobski, 1999). The United Kingdom has also a special standard of risk management, including Safety in Sport: Guidance for UK National Governing Bodies adopted since 1999 (Fuller, 1999), The Management of Safety in Physical Education and Outdoor Activities adopted since April 2005, and the Risk Management Guide for Community Sport Organization adopted since 2010 (Laroche and Corbett, 2010). It shows an organization that offers or implement program or sports activities using a risk management model. They found that the model is very important and should be in a standard form.

In educational institutions in Malaysia, there is no identification of skeletal elements of risk management practices sports (EIRMPS), the standard to be used by teachers, coaches and sports administrators to create a zero risk in sport, in addition to increasing community involvement in sports. The Ministry of Education should have implemented risk management practices to ensure the safety of all tools and equipment is met as well as the needs of sports activities (Utusan, 2011). Educational institutions in Malaysia and the Institute of Special Education are guided by professional circulars that are issued should the need arise (KPM, 2012; Sang, 2008; Abdul Rahim, 2004). Therefore, coaches only develop a risk management model based on the experiences of their creativity, knowledge and skills, and professional circulars stress safety regulations in the field, on the court and in the pool (Sang, 2011; Abdul Razak, Ismail and Panting, 2009; SPI, 2000, 1988).

In addition, some general aspects of security such as security, safety and partners and security tools and regions (Aaron, 2004;Nord and Moore, 2008), are important issues that need to be addressed to ensure a safe work enviroment and sports activities organized in order to prevent accidents resulting in injury (Daroji and Chia, 2012; Che Lah, 2007; Teng, 2005). Since there is no model of standard risk management practices, the researchers will conduct research and work to produce an EIRMPS framework.

Background

A coach is a significant factor in influencing athletic performance (Harter, 1981; Horn, 1985; and Weiss, Ebbeck, McAuley and Weise, 1990). Harter developed a theory in 1981 to explain that the practice of coaches identifying significant risk is an element of performance athlete development behaviour. Athletes who receive consistent and positive training from coaches will develop competence and personal ability and improve athletic performance (Harter 1981). This means that a coach who can competently perform EIRMPS will improve athletic performance. This is supported by Smith, Smoll and Hunt (1989), Sander (1981) and Weiss (1987), who state that the behaviour of the coach affects cognitive perception and attitude towards competition of athletes in sports competitions.

According to Tie (2002), taking legal action against a teacher has seeped into the field of education in Malaysia. As there is no risk management model, parents or student teachers often claim in court for their negligence and failure to carry out precautionary measures. One example is the case of failure of teachers' supervision or teacher negligence causing students to take effective action under its purview blind left eye while playing hockey (Malaysia, 2010). In addition, a student drowned while participating in an outdoor activities program (Malaysia, 2011). The next case is due to the negligence of coaches who failed to adequately examine the rope during an abseiling activity, which caused an athlete's foot fracture (IPGKPM, 2011). According to Mustaffa and Esa (2013), and Esa and Mustaffa (2014), the community, including teachers, still lack clarity about aspects of risk management; security is extremely important and should always come first.

According to Rothe (2009), designing a risk management model is one of the ways to prevent the problem and can be used to serve as a guideline in the present and the future. The design focuses on the aspects of prevention, protection and security of schools that are free from negative elements (Abdul Razak, Ismail and Panting, 2009; Che Lan, 2012) such as injury during sports programs. Most risk management models relate to risk management of buildings, transport, the environment and business (KPM, 2012; Nurman, 2011; Bakhtiar, 2008; HIRARC, 2008; MIROS, 2007; Mohd. Amin, Abdul Ghani and Ab. Latif, 2005; KPM, 2002; Mukhtar, 2001). However, risk management is not emphasized in sports. According to Thye (2010), school management and the Department of Education, representing employers, have general responsibility for ensuring the safety and welfare of teachers and support staff as well as protecting students and visitors.

- **Purpose of the study**

  This study was conducted in order to determine the elements of identification of risk management practices in Malaysia ITE sports coaching. It aims to identify elements that are a liability and tort; equipment and facilities; and demographic coaches.

- **Objective**

  This research aims to achieve the following objectives:

  i. Identify the elements of identification of risk management practices for sports coaches in ITE.
  ii. Identify the dominant element of the risk management of sports coaches.
  iii. Identify EIRMPS reliability of ITE coaches based on the perception of athletes.

- **Conceptual framework**

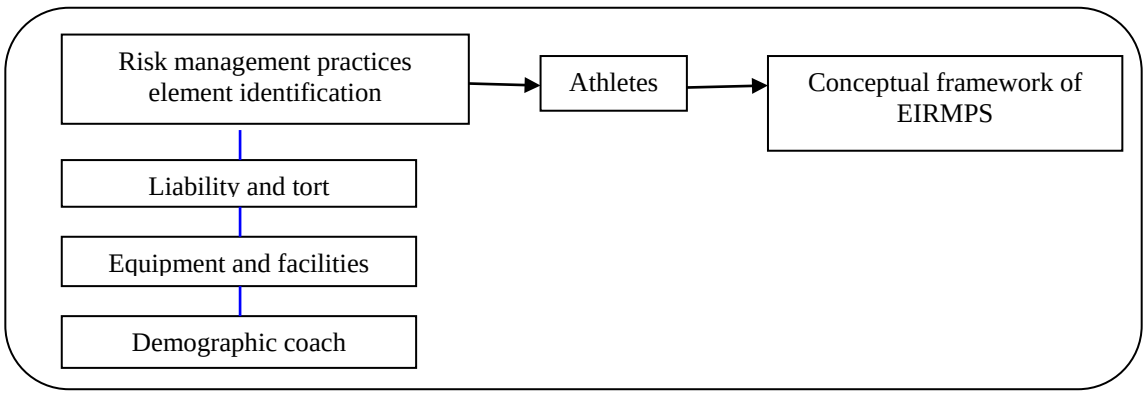

Figure 1.1 Framework concept study

2.0 THE METHODOLOGY OF THE STUDY

This study uses a survey to identify the research problem, and define the objectives and scope of the study. The instrument was a questionnaire and a pilot study data analysis using the Rasch measurement model for the purposes of carrying out four diagnosis functionality checks items.The findings of the pilot analysis have a Cronbach alpha reliability and trustworthiness of individuals of 0.99 (very good) and the reliability was 0.75, indicating a good level. Afterwards, the exact research to identify risk management competencies of sports coaches and researchers determines the dominant factor according to data analysed by the Rasch model approach. The instrument was a questionnaire and a pilot study data analysis using the Rasch measurement model for the purposes of carrying out four diagnosis functionality checks items.

3.0 FINDINGS

Based on analysis of the level of athletes' approval of EIRMPS coach, Table 3.1 shows the overall findings with a mean size (mean measure) and tort liability of 0:01 min logit and a score of 4.28. This finding indicates that a written plan for managing risk incidents (LT1), being clear about the policy program (LT2), a clear idea of the legal aspects in the sports program (LT3), recognizing the importance of insurance coverage (LT4), the principles of always thinking one step ahead (LT5), recognizing the importance of safety instructions prior to the event (LT6), providing early warning procedure security issues (LT7), manual risk management exercise (LT8), in compliance with standard operating procedures that have been established (LT9), activities in accordance with the ability of the participants (LT10), participants learning to carry out activities that are gradually developed to avoid the dangers inherent in this activity (LT11), progression activity in lesson planning (LT12), equipment layout systematic activities (LT13) were agreed by the respondents with a high level of EIRMPS.

Table 3.1 Analysis of athletes against the overall level agreement EIRMPS compatible customary coach.

Element	Mean measurement (logit)	Mean score	Level	Mean factor sequence
Demographic coach	-0.20	4.34	High	↑
Liability and tort	0.01	4.28	High	
Equipment and facilities	0.11	4.24	High	

Analysis of the identification phase and tort liability towards EIRMPS detail are shown in Table 3.2.Clear legal aspects in sports programs with a mean size of 0:44 min logit and score of 4.14, indicates the importance of insurance protection with a mean size of 0.23 min logit and a score of 4.21, the principles are always thinking one step further with a mean size of 0.08 logit and mean score of 4.31, recognizing the importance of safety instructions prior to the event with a mean size of 0.71 logit and mean score of 4.48, the provision of early warning procedure security issues with a mean size of -0.03 logit and mean score of 4.29, risk management handbook with the sports activities with a mean size of 0.64 logit and mean score of 4.08, in compliance with standard operating procedures that have been established with a mean size of 0.13 logit and mean score of 4.24, according to the ability of the participants with a mean size of -0.52 logit and mean score of 4.43. Participants learn to conduct activities that are gradually developed to avoid the dangers inherent in the activity with a mean size of -0.69 logit and mean score of 4.49, and gradually developed activity in lesson planning with a mean size of 0.16 min logit and score of 4.23, and identification and tort liability equipment layout systematic activity with a mean size of -0.58 logit and a 4.45 min score is also high on the level of perception.

Table 3.2: Analysis identification of tort liability and the approval level athletes to practise appropriate EIRMPS coaching

Label	Identification of the liability and tort (LT)	Mean measurement (logit)	Mean score	Level
LT1	Written plan for managing risk incidents.	0.68	4.06	High
LT2	Be clear about the policy program.	0.41	4.15	High
LT3	A clear idea of the legal aspects in the sports program.	0.44	4.14	High
LT4	Realize the importance of insurance coverage.	0.23	4.21	High
LT5	The principles are always thinking one step ahead.	-0.08	4.31	High
LT6	Recognize the importance of safety instructions prior to the event.	-0.71	4.48	High
LT7	Providing early warning procedure security issues.	-0.03	4.29	High
LT8	Manual risk management exercise	0.64	4.08	High
LT9	In compliance with standard operating procedures that have been established.	0.13	4.24	High
LT10	Activities in accordance with the ability of the participants.	-0.52	4.43	High
LT11	Participants learn to carry out activities that are gradually developed to avoid the dangers inherent in this activity.	-0.69	4.49	High
LT12	Progression activity in lesson planning	0.16	4.23	High
LT13	Equipment layout systematic activities.	-0.58	4.45	High

Based on analysis of the level of skill competence to EIRMPS coach, Table 3.1 shows the identification of the equipment and the facilities with an overall mean value of measurements (mean measure) of 0.11 logit and the mean score is 4.24. The findings of Table 3.3 explain that with the identification of the equipment and facilities, the implementation of the basic repair of equipment related to sports activities (EF1), preparation of a list of equipment for sports programs (EF2), implementation of file systems keeping a record of the inspection of facilities (PK3), preparation checklist when carrying out security checks because (EF4), before conducting inspections at regular intervals of sports equipment (EF5), environmental inspection activities in a safe condition (EF6), ensuring useful sports gadgets (EF7), lack of necessary sports equipment (EF8) and ease of use of safety procedures must be clearly outlined to the participants (EF9) was approved by respondents at a high level that can contribute to EIRMPS.

Table 3.3: Analysis identification of the equipment and facility level, athletes' approval of the appropriate EIRMPS coaching

Label	Identification of the equipment and facilities (EF)	Mean measurement (logit)	Mean score	Level
EF1	The implementation of the basic repair of equipment related to sports activities.	0.19	4.23	High
EF2	Preparation of a list of equipment for sports programs.	0.02	4.29	High
EF3	Implementation of file systems to keep a record of the inspection of facilities.	0.54	4.14	High
EF4	Preparation checklist when carrying out security checks because.	0.28	4.20	High
EF5	Before conducting inspections at regular intervals of sports equipment.	0.26	4.21	High
EF6	Environmental inspection activities in a safe condition.	-0.38	4.40	High
EF7	Ensuring useful sports gadgets	-0.14	4.33	High
EF8	Lack of necessary sports equipment.	0.39	4.14	High
EF9	Ease of use of safety procedures must be clearly outlined to the participants.	-0.18	4.34	High

Analysis of the level of identification of equipment and facilities in detail is shown in Table 3.3. For the identification of equipment and facilities for the implementation of the basic repair related equipment exercise, it was agreed by the respondents that the highest level against the practice of their identification with a mean size of 0.19 logit and mean score of 4.23. Next, the identification of the preparation of a list of equipment for sports programs recorded a mean size of 0.02 and a mean score of 4.29, the identification of the implementation of the file system to keep a record of inspected facilities (logit 0.54 min size, mean score of 4.14), providing a checklist

when carrying out security checks (min 12.28 logit scale, mean score of 4.20), prior to inspection activities of sports equipment on a regular basis (min 0.26 logit score, the mean score of 4.21), environmental inspection activities in a safe condition (mean score of -0.38 logit, the mean score 4.40), ensuring useful sports gadgets (min -0.14 logit score, mean score of 4.33), lack of necessary sports equipment (min 0.39 logit score, mean score of 4.14), and the ease of use and safety procedures must be clearly outlined to the participants (mean -0.18 logit score, mean score of 4.34) as well as a high level of perception.

Based on an analysis of demographic identification of EIRMPS coaches, Table 3.1 shows the overall size of the mean value (mean measure) of -0.29 logit and mean score of 4.34. The findings of Table 3.4 explain that the ability to generate new ideas (DC1), being capable of engaging in group effectively in crisis situations (DC2), accepting responsibility for helping less experienced staff (DC3), according to the current development areas (DC4), having professional qualifications in sports activities (DC5), being skilled in creating an atmosphere of trust (DC6), being ready to improve knowledge of first aid (DC7), being willing to spend their own money to obtain CPR certification (DC8) and even being prepared to buy a first aid kit with self-finance (DC9) was agreed upon by the respondents at a high level to have an impact on EIRMPS.

Table 3.4: Analysis of demographic identification stage coach EIRMPS approval of the appropriate athletes coaching

Label	Identification of the demographics coach	Mean measurement (logit)	Mean score	Level
DC1	Ability to generate new ideas.	-0.32	4.35	High
DC2	Capable of engaging in group effectively in crisis situations.	-0.39	4.40	High
DC3	Accept responsibility for helping less experienced staff.	-0.08	4.31	High
DC4	According to the current development areas.	-0.71	4.48	High
DC5	Have professional qualifications in sports activities.	-0.24	4.37	High
DC6	Skilled in creating an atmosphere of trust.	-0.31	4.38	High
DC7	Ready to improve knowledge of first aid.	-0.11	4.32	High
DC8	Are willing to spend their own money to obtain CPR certification.	0.33	4.19	High
DC9	Ready to guide even had to buy a first aid kit with its own financing.	0.03	4.28	High

Analysis identification of demography coach EIRMPS details are shown in Table 3.4. For the identification of demography coaches being able to generate new ideas, it was agreed by the respondents that the highest level of recognition practices with a mean size of -0.32 logit and a mean score of 4.35. Next, the identification of demography coaches capable of engaging in a group effectively in a crisis situation had a mean size of -0.39 logit and a mean score of 4.40, accepting responsibility for helping less experienced staff (mean size of -0.08 logit, mean score of 31.4), according to the current development areas (mean score of -0.71 logit, a mean score of 4.48), have a professional qualification in sports activities (mean -0.24 logit score, a mean score of 4.37), skilled in creating an atmosphere of trust (mean -0.31 logit score, a mean score of 4.38), is set to increase knowledge of first aid (min -0.11 logit score, mean score of 4.32), are willing to spend their own money to obtain CPR certification (min 0.33 logit score, a mean score of 4.19) and being prepared to buy a first aid kit with self-finance (mean score of 12.03 logit, a mean score of 4.28) as well as a high level of perception.

4.0 DISCUSSION

The study draft risk management framework was drived from the work of Bandyopadhyay et al (1999), Clement (1988, 1998), Fried (1999), Head and Horn (1991), Kaiser (1986), Miccolis and Shah (2000), Mulrooney and Farmer (1998), Tummala and Leung (1996), and Van der Smissen (1990) who underlined the importance of identifying risk and being prepared to address the risks that occur. Dimitriadi and Dimitriadi (2007), Parkhouse (2005) and Beech and Chadwick (2004) have identified any possibility of risk that may be encountered by a person in a program of activities and sports, to evaluate the possible risks that may arise through events or sports programs.

EIRMPS found through analysis of documents is a liability and tort, equipment and facilities, and demographic coaches. Nohr (2009) and Keehan (2009) explain that inspection equipment and other facilities into practice before the game and have documented regular. Spengler et al. (2009) explain that liability and tort should be

understood and mastered. Practical implications of tort liability and key management to protect against risks such as convenience and safety program for joint venture, employee, staff and spectators, employee relations and gender equity in sports. Bezdicek (2009) and Aaron (2004) explain that coaching practices for risk management personnel with a background sport through participation in sports or experience (knowledge) are in earlier stages of higher and better than the coach who has a sports background. This is due to their mastery of risk management in various sporting environments. The importance of personnel who have a background in sports was echoed by researchers such as Sekendiz (2011), Nohr (2009), Zimmerman (2007), and Van der Smissen (1990). In the process of effective risk management, it is important for managers to provide all necessary security measures and preparing for a possible alternative and providing solutions through a comprehensive strategic plan to reduce or eliminate risk.

The findings explain that EIRMPS agreed athletes is liability and tort, equipment and facilities, and suitable demographic coach ITE practised by carrying out activities and sports program. This finding is in line with Sekendiz (2011) and Spengler et al. (2009), who explained that EIRMPS practised by individuals can improve their knowledge and skills in a particular field.

Based on the above discussion, for sports ITE coaches, elements of risk management practices agreed upon athletes and coaches dominant demographic, liability and tort as well as equipment and facilities. It has been suggested they should practise to improve their competence in EIRMPS. In addition, this EIRMPS can have a positive impact on the development of knowledge, skills and attitudes to ensure the establishment of a secure environment in performing a task.

5.0 CONCLUSIONS

It can be concluded that according to EIRMPS practised by ITE coaches, the dominant element is the demographic coach, liability and tort, as well as equipment and facilities. EIRMPS Cronbach alpha reliability values and individual reliability is 0.92 (very good) and the reliability was 0.72 indicating a good level. This finding explains the situation in Malaysia; coaches want to maintain EIRMPS implementation with the process of demographic coaching, liability and tort, as well as equipment and facilities to ensure safe sport programs and zero risk.

REFERENCES

Aaron, T. C. (2004). *Factors affecting the performance levels of risk management behaviours of Florida High Schools athletic directors*. The Florida State University College of Education: Thesis Ph.D.

Abdul Rahim, A. A. (2004). *Kursus Perguruan Lepas Ijazah: Pengurusan Gerak Kerja Kokurikulum.* Selangor: Fajar Bakti.

Abdul Razak, M. N., Ismail, C. I., dan Panting, A. J. (2009). *HBPE3203: Kebersihan dan keselamatan persekitaran.* Selangor: Open University Malaysia.

Bakhtiar, J. N. H (2008). *Kajian penilaian risiko terhadap keselamatan pekerja pemprosesan buah Kelapa Sawit.* Universiti Sains Malaysia: Thesis Sarjana.

Bandyopadhyay, K., Mykytyn, P. P., & Mykytyn, K. (1999). A framework for integrated risk management in information technology. *Management Decision*, *37* (5), 437–445.

Beech, J., & Chadwick, S. (2004). *The Business of sport management*. UK: PEARSON Education.

Bezdicek, P. W. (2009). *Risk management practice in high school athletic departments.* University of Wisconsin-LA-Crosse: Thesis Ph.D.

Che Lah, N. (2007). *HBPE3203 Pendidikan Luar*. Selangor: Open University Malaysia

Che Lan, N. (2012). *HBPE2103 Program Bersepadu Sekolah Sihat*. Selangor: Open University Malaysia.

Clement, A. (1988). *Law in sport and physical activity*. Indianapolis, IN: Benchmark Press.

Clement, A. (1998). *Law in sport and physical activity*. 2nd.ed. Tallahassee, FL: Sport and Law Press.

Daroji, I., & Chia, C. M. (2012). *Pendidikan Luar*. Selangor: Multimedia.

Dimitriadi, Anna., & Dimitriadi, Sophia. (2007). A Conceptual model of risk management its importance for sport & Leisure. *SMIJ* – Vol. 3, Number 1, 2007.

Esa, A., & Mustaffa, F. (2014). Validation of teacher education of Malaysia trainer's sport risk management practices constructs. *International Review of social Sciences*. May 2014.116–129.

Fried, G. (1999). *Safe at first: A guide to help sport administrators reduce their liability*. Durham, NC: Carolina Academic Press.

Fuller, C. W. (1999). *Safety in sport: Guidance for UK national governing bodies*. United Kingdom: UK Sport.

Harter (1981). A model of intrinsic mastery motivation in children: Individual differences and developmental change. In W. A. Collins (Ed.), *Symposium on child psychology*: Vol. 2 (pp. 215–255) Champaign, IL: Human Kinetics Press.

Head, G., & Horn, S., II. (1991). *Essentials of risk management* (Vol. 1, 2nd. ed.). PA: Insurance Institute of America.

HIRARC (2008). *Garis Panduan bagi pengenalpastian Hazard, Penaksiran Risiko dan Kawalan Risiko*. Jabatan Keselamatan dan kesihatan Pekerjaan. Kuala Lumpur: Kementerian Sumber Manusia Malaysia.

Horn, T. S. (1985). Coaches' feedback and changes in children's perceptions of their physical competence. *Journal of Educational Psychology*, 71, 174-186.

IPGKPM, (2011) , *Laporan Pendidikan Luar dan Bina Insan guru KDC KPLI LPBS Pendidikan Khas ambilan November 2010 & KPLI (R) Bahasa Inggeris 2 ambilan January 2011*.

Kaiser, R. A. (1986). *Liability and law in recreation, parks, and sports*. Englewood Cliffs, NJ: Prentice-Hall.

Keehan, A. S. (2009). *Managing risk in college athletics*. Washington: The Chronicle of Higher Education.

KPM, (2002). *Konsep dan manual sekolah selamat: Panduan pelaksanaan menjadikan sekolah, komuniti dan keluarga selamat untuk kanak-kanak*. Putrajaya: Bahagian Sekolah, Kementerian Pelajaran Malaysia.

KPM, (2012). *Konsep dan manual sekolah selamat: Panduan pelaksanaan menjadikan sekolah, komuniti dan keluarga selamat untuk kanak-kanak*. Putrajaya: Bahagian Sekolah, Kementerian Pelajaran Malaysia.

Laroche, D. B. and Corbett, R. (2010). *Risk management guide for community sport organizations*. Canada: 2010 Legacies Now.

Malaysia (2010). *Mahkamah Tinggi Malaya* , Rayuan Sivil: No. R3-12B-48-2010.

Malaysia (2011). *Mahkamah tinggi Malaya*, Bahagian Sivil: S5-21-313-2006

Miccolis, J., & Shah, S. (2000). Enterprise *risk management: An analytic approach*. Retrieved January 22, 2002, from http://www.towers.com/towers_publications/ERM/erm2000.htm.

MIROS (2007). *Kod Amalan Keselamatan Kesihatan dan Alam Sekitar Untuk Sektor Pengangkutan.* Kuala Lumpur: Institut Penyelidikan Keselamatan Jalan Raya Malaysia.

Mohd. Amin, S. Abdul Ghani, S. dan Ab. Latib, A. (2005). Konsep dan pelaksanaan sekolah selamat. *Seminar on Education, Faculty of Education. Universiti Teknologi Malaysia.*

Mukhtar, M. (2001). *Tahap pengetahuan tentang keselamatan dan kesihatan pekerjaan di kalangan pekerja kilang Elektornik: Satu kajian kes di sebuah kilang elektronik di Shah Alam*. Universiti Putra Malaysia: Masters Thesis.

Mulrooney, A. L., & Farmer, P. (1998). Risk management in public assembly facilities. In H. Appenzeller (Ed.), *Risk management in sport: Issues and strategies* (pp.267–281). Durham, NC: Carolina Academic Press.

Mustaffa, F. & Esa, A. (2013). Amalan Pengurusan Risiko Sukan Pensyarah Institut Pendidikan Guru Malaysia. *Prosiding 1st UMS International Sport Science Conference.* Sabah: Universiti Malaysia Sabah. 1–330.

Nohr, K. (2009). *Managing risk in sport and recreation: the essential guide for loss prevention.* United States: Human Kinetics.

Nord, N., & Moore, T. H. (2008). CPSC Releases the "top five hidden home hazards" popular magnetic toys on the list of deadly dangers. *Consumer Product Safety Review WINTER 2008.*Vol. 12(1), 1–2.

Nurman, S. N. (2011). *Mengukur Keselamatan dan Kesihatan Fasiliti Sekolah Tadika Swasta di Medan*. Universiti Tun Hussein Onn Malaysia: Master's thesis.

Parkhouse, B. L. (2005). *The management of sport. Its foundation and application*. NY: McGraw-Hill International.

Rothe, J. P. (2009). The voluntary use of physical education safety guidelines in schools. *Journal of Physical Education, Recreation & Dance.* 80(3), 43–49.

Sander, R. (1981). Coaching style and the athlete's self concept. The Athletic Journal. 13.(5), 34- 38.

Sang, M. S. (2008) *Siri Pendidikan Kursus Penilaian Tahap Kecekapan pengajaran & pengajaran untuk Pegawai Perkhidmatan Pelajaran Gred DGA34, DG44 & DG48 (KUP).* Selangor: Multimedia.

Sang, M. S. (2011) *Pengurusan Kokurikulum.* Selangor:Multimedia.

Sekendiz, B. (2011). *An Investigation of risk management practice in the health and fitness facilities in Queensland: minimizing the likelihood of legal liability.* Bond University: Ph.D.thesis

Sobski, J. (1999). *Guidelines for the safe conduct of sport and physical activity in schools*. New South Wales: Department of Education and Training.

Spengler, John O., Anderson, Paul M., Cannaughton, Daniel P. and Baker III, Thomas A. (2009). *Introduction to Sport Law*. Human Kinetics, United States.

SPI (1988). *Surat Pekeliling Ikhtisas Bil.8/1988: Keselamatan diri pelajar di sekolah*. Kuala Lumpur: Kementerian Pelajaran Malaysia.

SPI (2000). *Surat Pekeliling Iktisas Bil. 9/2000: Panduan keselamatan diri pelajar semasa pengajaran Pendidikan Jasmani dan Kesihatan serta kegiatan Kokurikulum dan Sukan di dalam dan di luar kawasaan sekolah*. Putrajaya: Kementerian Pelajaran Malaysia.

Teng Boon Tong (2005). *Pendidikan Jasmani dan Pendidikan Kesihatan. Kursus Diploma Perguruan Malaysia.* Selangor: Longman.

Thye, L. L. (2010, Ogos 10). *Program Keselamatan, Kesihatan pekerja perlu diperluas ke sekolah.* Rencana; Berita Harian. ms 2

Tie Fatt Hee (2002). *Undang-undang pendidikan di Malaysia*. Shah Alam: Fajar Bakti.

Tummala, V. M .Rae., & Leung, Y. H. (1996). The risk management model to assess safety and reliability. *Journal of Quality, 13* (8), 53-62.

Utusan Malaysia. (2011). *Pelajar Maut di Hempap Tiang Gol*. 20 September 2011.

Van der Smissen, B. (1990). *Legal liability and risk management for public and private entities.* Cincinnati: Anderson Publishing Company.

Weiss, M. R. (1987). Self-esteem and achievement in children's sport. In D. Gould, & M. R. Weiss (Eds.), Advances in pediatric sport sciences: Vol. 2. *Behavioral issues* (pp. 87–120). Human Kinetics Press.

Weiss, M. R., Ebbeck, V., McAuley, E., & Weise, D. (1990). Self-esteem and causal attributions for children's physical and social competence in sport. *Journal of Sport and Exercise Psychology.* 12, 21–36.

Zimmerman, E. P. (2007). *Risk management practice of Collegiate Athletic Trainers: An Examination of Policies and Procedures.* University Huntington, West Virginia: Thesis Ph.D.

IMPACT OF TEACHERS' QUALIFICATION AND EXPERIENCE ON THE PERFORMANCE OF STUDENTS IN COLLEGES OF EDUCATION IN KADUNA STATE, NIGERIA

Dr (Mrs) Hanna Onyi Yusuf
Department of Educational Foundations and Curriculum,
Faculty of Education Ahmadu Bello University, Zaria, Nigeria
E-mail: hannayusuf@yahoo.com

Dr. Abdullahi Aliyu Dada
Department of Educational Foundations and Curriculum,
Ahmadu Bello University, Zaria, Nigeria
dadaabdullahialiyu@gmail.com

Abstract: The study examined the impact of teachers' qualification and experience on students' performance in Colleges of Education in Kaduna State, Nigeria. Two Colleges of Education in Kaduna state were used for the study. A total of twenty (20) teachers and one hundred (100) students were randomly selected from the two Colleges of Education. The data was collected using questionnaire and students' test scores. Data was analyzed using frequency counts, percentages and t-test. The results revealed that a significant difference existed in the performance of students taught English language by professional and experienced teachers. The study recommended among others, that only qualified and experienced teachers should be allowed to teach in Colleges of Education in Kaduna state, Nigeria. All non professional and unqualified teachers should be encouraged to pursue their post graduate studies (such as Post Graduate Diploma in Education, Master's and Doctoral degrees in Education) on a part-time or full-time basis. This will help to improve the quality of their teaching and consequently improve the performance of students and the quality of teacher education in Nigeria.
Keywords: Impact, teachers, qualification, experience, students, performance, Nigeria Education.

INTRODUCTION/BACKGROUND TO THE STUDY

Many factors contribute to a student's academic performance, including individual characteristics, family and Neighbourhood experiences. But research such as Jordan, Mendro and Weersinge (1997) suggests that among school related factors, teachers matter most. When it comes to student performance on reading and math tests, a teacher is estimated to have two or three times the impact of any other school factor, including services, facilities and even leadership (Mohammed and Yusuf, 2015).

Effective teachers are best identified by their performance not by their background or experiences. Despite common perceptions, effective teacher cannot reliably be identified based on where they went to school, whether they are registered or how long they are taught. The best way to asses teachers' effectiveness is to look at their on the – job performance including what they do in the classroom and how much progress their students make on achievement tests. Quality teachers are considered to be those who bring about student learning. (Harris and Sass, 2006)

Non school factors do influence student achievement but effective teaching has the potential to help level the playing of such factors.

The importance of good or quality teachers is no secret or it cannot be overemphasized. Schools have always sought out the best teachers they could get in the belief that their students' success depends on it. If teachers are so important to student learning, how can schools make sure all students receive the benefit of good/quality teachers?

More than two decades of research findings are unequivocal about the connection between teacher quality and student learning. The report of the National Commission on teaching and America's future (1996) made teaching the core of its three simple promises in its blueprint for reforming the nation's schools. They are: what teachers know and can do is the most important influence on what students learn. Recruiting, preparing and retaining good teachers is the central strategy for improving schools. School reform cannot succeed unless it focuses on creating the conditions under which teachers can teach well.

A highly effective teacher, therefore, is one whose students show the most gains from one year to the next. By using this approach, researchers are able to isolate the effect of the teacher from other factors related to student performance such as students' prior academic record or school they attended. "The effect of teaching on student learning is greater than student ethnicity or family income, school attended by student or class size. The effect is stronger for poor and or minority students than for their more affluent peers, although all groups benefit from effective teachers. The effects accumulate over the years. The positive effects associated with being taught by a highly effective teacher, defined as a teacher whose average student score gain is in the top 25% were stronger for poor and minority students than for their white and affluent counter parts. The study found that low income students were more likely to benefit from instruction by a highly effective teacher than were their more advantaged peers Van der Bergh and Roos, (2014). Another study found that the achievement gain from having a highly effective teacher could be almost three times as large for African American students as for white students even when comparing students who start with similar achievement levels (Sanders and Rivers 1996). All of the foregoing necessitated the need to carry out this study. It against this background that this study is undertaken to determine the impact of teacher qualification and experience on students' performance in Colleges of Education in Kaduna State.

A second important finding from this work was that the positive effects of teacher quality appear to accumulate over the years. That is, students who were enrolled in succession of classes taught by effective teachers demonstrated greater learning gains than did students who had the least effective teachers one after another. For example, 5th grade math student who had three consecutive highly effective teachers scored between 52 and 54% percentile point ahead of students who had three consecutive teachers who were least effective even though the math achievement of both groups of students was the same prior to entering second grade (Sanders and Rivers, 1996).

Review of Related Literature

Rivkin, Hamshek and Kain (2006) found that teacher quality differences explained the largest portion of the variation in reading and math achievement.

Jordan, Mendro and Weerasingle (1997) found that the difference between students who had three consecutive highly effective teachers (again defined as those whose students showed the most improvement and those who had three consecutive low-effect teachers (those with the least improvement) in the Dallas schools was 34 percentile points in reading achievement and 49 percentile points in math.

There is growing interest in the professionaldevelopment of educators as the demands, expectations,and requirements of teacher educationincreasingly come under scrutiny (Louhran2014). What the teacher does, influences, thewhole process of learning. Effective teacher producesbetter performing students (Akiri 2013).Van den Bergh and Roos (2014) maintained thatprofessional development of teachers can beeffective and sustainable, if certain conditionsare met (Curwood 2014). Besides, the analysisof Van den Bergh and Roos (2014) suggestedthat the implementation of educational reforms,including reforms associated with technologyintegration and literacy education, is often dependentupon teachers' skills, values, and culturalmodels. While hiring of qualified teachersis encouraged for improvement of academic performance,theories from the study of Firestone(2014) caution that policies to remove ineffectiveteachers

should not reduce autonomy ortrust among effective teachers and that evaluationsshould provide teachers with useful feedbackand policy makers with information on theconditions that facilitate good teaching.
Empirical studies confirm relationships between qualifications of a teacher and learnersacademic achievement. Unanma et al. (2013) examined the relationship between Teacher's academicqualifications and academic achievement of Senior Secondary school Students in Chemistryand discovered that there is a positive relationshipbetween the variables. This was endorsedby the findings of Adeyemi (2014) in thereports to analysis the performance of the English Language Teachers (ELTs) and Teacherswith Formal Education (TFEs) at secondary levelin public high schools. Adeyemi's results showthat those students who receive instruction fromthe ELTs show better results in the final examinations as compared to those who receive inputfrom the TFEs. Boyd et al. (2008) explored that improvements in teacher qualifications, especially among the poorest schools, appear to haveresulted in improved student achievement. They further elaborated that estimating the effect ofteacher attributes using a value-added model predict that observable qualifications of teachersresulted in average improved achievement. To assess whether or not there is a statisticallysignificant difference in teacher qualifications that might help to predict the academic performance of middle school students on the mathematicsportion of the Alabama Reading and MathvTest (ARMT), Richardson (2008) indicated thata significant relationship does exist between teacher qualifications and student achievement.Specifically, the findings revealed that studentswith mathematics teachers who had 5 or more years' experience performed better on the mathportion of the Alabama Reading and Math Test (ARMT).

Ogbonnaya (2009) suggested that if all mathematicsteachers have a degree, are specializedin mathematics or mathematics education and have more than five years teaching experience,the students' achievement in mathematics would likely improve. Richardson (2008) also concludedthat if the teacher has a traditional secondarymathematics certification then students will tend to score higher on the ARMT compared to teacherswith alternative certification.

Teachers have been recognized as indispensable human resource and, indeed, the single most important elementin the school system, more important than the quality of equipment and materials and the level of financing. Teachers are very important. On account of theimportance, the education law in Nigeria provides that: "No person shall teach in any school unless his name has beenplaced on the register of teachers or after his name has been removed from such register." As of now, one is legally recognized as a teacher ifhis name is in the register of the Teachers Registration Council and he ceases to be a teacher once his name is deletedfrom the register. (Teachers Registration Council, 2004)

According to Harris and Sass (2011), it is accepted in general that promoting teacher quality is a key element inimproving primary and secondary education in the United States. In like manner, researchers, including Bajah (1979),Obanya (1982), Ajayi (1989), Hallak (1990), Hanushek and Rivkin (2006), have all found and emphasized that the qualityof the education system depended on the quantity, quality and devotion of its teaching work force.

Okoye, Momoh, Aigbomian, &Okecha (2008) conducted a study which examined the correlation between twoindependent variables of teacher quality andinstructional strategy on students' performance in secondary school science

in Ethiope East and Ukwuani Local Government Areas of Delta State. The result showed that the teacher quality andinstructional strategy had positive significant relationship with achievement in science; and that teacher quality andinstructional strategy were two non-separate interactive independent variables in science education.

Akinfe, Olofinniyi&Fashiku (2012) conducted a study entitled: "Teachers' Quality as Correlates of StudentsAcademic Performance in Biology in Senior Secondary Schools in Ondo State, Nigeria." They found that: the role ofprofessionally qualified/trained teachers was an important teacher quality which enhanced students' academicachievement in biology; teaching methods adopted by the teachers significantly influenced

achievement of the behavioralobjectives; and that teachers' experience significantly influenced students' academic performance.
Research findings have also established that teacher's teaching experience is positively correlated with learningoutcome. Raw (2003) affirmed that teachers with years of experience in the profession turned out students with higheracademic performance. This is due to the fact that these teachers are able to harmonies the minds and emotions of theirstudents in class and this produces better academic achievement.

So far, much efforts seem to have been directed at mathematics and English language, which are two keysubjects and extremely important for those with the intent of advancing their education in any Nigerian university, andalso at thesciences. There is dearth of effort, if any at all, towards determining the quality of teachers at the tertiary level of education, particularly in Colleges of Education. The present study set out to fill this gap.

Objective of the Study
The study sought to achieve the following objective.

1. To determine the impact of teachers' qualification and experience on the performance of students in English in Colleges of Education in Kaduna state, Nigeria.

Research Question
What is the impact of teachers' qualification and experience on the performance of students in English in Colleges of Education in Kaduna state, Nigeria?

Hypothesis
Teachers' qualification and experience have no significant impact on the performance of students in English in Colleges of Education in Kaduna state, Nigeria.

METHODOLOGY

Research Design
The research design for this study is descriptive survey and ex-post factor. An ex-post factor research seeks to find out facts that are associated with certain occurrences, outcomes, conditions or types of behaviours by undertaking the analysis of past events and already existing conditions. In this study, the researchers have no control over the variables neither could they apply any form of treatment to the group because they already exist.

The study analysed the 2014 end of semester examination result of NCE II students in order to determine the impact of teachers' qualification and experience on the performance of students in English language in Colleges of Education in Kaduna state.

Population of the study
The population of the study included all the one hundred and twenty (120) teachers teaching English Language and one thousand six hundred and thirty (1,630) students' offering English Language in the two Colleges of Education in Kaduna state.

Sample and Sampling Techniques
A simple random sampling technique was used to select one hundred (100) students offering English as a course (i.e. fifty (50) students from each of the colleges) and twenty (20) teachers (i.e. ten (10) English Language teachers from each of the Colleges of Education.

Instrumentation
The instruments used for the study were a questionnaire titled Impact of Teachers' Qualification and Experience on the Performance of Students (ITQEPS). It contained two sections. Section A elicited information on the Bio-data of teachers. Section B elicited information on the teachers' qualification and experience. Other relevant data such as students' test scores obtained from their past previous and semester

examinations were analyzed. Test-retest method was used to establish the reliability of the instrument. A reliability –co-efficient shows an r-value of 0.78 using Pearson product moment correlation co efficient. The r-value of 0.78 indicates a high reliability index for the instruments.

Data Presentation and Analysis

Table 1: Showing Teachers' Gender

College	Number of teachers Male	Percentage %	Number of teachers Female	Percentage %	Total number of teachers	%
1	3	30%	7	70%	10	100%
2	4	40%	6	60%	10	100%
Total	7	35%	13	65%	20	100%

Table 1 revealed that majority of teachers 13(65%) teaching English language in the two Colleges of Education are females while 7(35%) are males.

Table 2: Showing Teachers' Age

Age Range	Number of Teacher College 1	Percentage %	Number of Teachers College 2	Percentage %	Total	Percentage %
20 – 24	0	0	0	0	0	0
25 – 34	2	20%	1	10%	3	15%
35 – 44	5	50%	6	60%	11	55%
45 – 54	3	30%	2	20%	5	25%
55 and above	0	0%	1	10%	1	5%
Total	10	100	10	100	20	100%

Table 2 has revealed that majority of teachers 11(55%) are between age 35 and 44 years. This means majority of the teachers are middle aged.

Table 3: Showing the Qualification of Teachers

Teachers Qualification	Number of Teacher College 1	Percentage %	Number of Teachers College 2	Percentage %	Total	Percentage %
PhD	4	40%	3	30%	7	35%
M.Ed/M.A.Ed/ M.sc Ed	3	30%	4	40%	7	35%
M.A / M.sc	1	10%	1	10%	2	55%
B.Ed/B.A Ed/B.sc Ed	1	10%	1	10%	2	25%
B.A / Bsc	1	10%	1	10%	2	5%
Total	10	100	10	100	20	100%

Table 3 has revealed that majority of teachers 14(70%) have masters and PhD degrees with relevant teaching qualification in the two Colleges of Education used for the study. Only 1% have first degree or masters degree without teaching qualification.

Table 4: Showing Teachers' Years of Experience

Teachers Years of Experience	Number of Teacher College 1	Percentage %	Number of Teachers College 2	Percentage %	Total	Percentage %
1 – 5 years	2	20%	6	60%	8	40%
6 – 10 years	6	60%	3	30%	9	45%
11 – 15 years	1	10%	1	10%	2	10%
16 – 20 years	1	10%	0	0%	1	5%
21 and above	0	0%	0	0%	0	0%
Total	10	100	10	100	20	100%

Table 4 has revealed that majority of teachers 9 (45%) have between 6 – 10 years teaching experience. A reasonable number 8 (40%) have 1 – 5 years teaching experience. Only 2 (10%) have 11 – 15 years teaching experience while 1 (5%) have 16 – 20 years teaching experience.

Table 5: Showing Teachers' Rating of Students' Performance in English Language

Teachers' Rating	Number of Teacher College 1	Percentage %	Number of Teachers College 2	Percentage %	Total	Percentage %
Poor	0	0	0	0	0	0
Fairly good	1	10%	3	30%	4	20%
Good	6	60%	5	50%	11	55%
Very good	3	30%	2	20%	5	25%
Total	10	100%	10	100%	20	100%

Table 5 has revealed teachers' rating of their students' performance in English language in the two colleges that were used for the study. Majority of the teachers' 11 (55%) from the data on table 5 have rated their students' performance in English language as good. A few teachers 4 (20%) rated their students' performance in English as fairly good while 5 (25%) rated their students' performance in English as very good. None of the teachers in the two Colleges rated their students poorly.

Table 6: Showing Teachers' Participation in Workshops, Seminars, Conferences, Inservice or Study Leave Training

Type of Training Received	Number of Teacher College 1	Percentage %	Number of Teachers College 2	Percentage %	Total	Percentage %
Workshops	1	10%	1	10%	2	10%
Seminars	1	10%	1	10%	2	10%
Conferences	1	10%	2	20%	3	15%
All of the above	7	70%	6	60%	13	65%
Total	10	100%	10	100%	20	100%

Table 6 has revealed that majority of the teachers 13 (65%) from both colleges have attended workshops, seminars and conferences even though only 2 out of 20 (i.e.10%) have attended workshops and seminars. Majority, however, have attended conferences.

The data collected were analysed using mean, standard deviation and t-test statistics. The t-test was used to test the hypothesis postulated for the research which state that teachers' qualification and experience have no significant impact on students' performance in English in Colleges of Education in Kaduna state, Nigeria.

Table 7: T-Test Analysis of Students' Performance taught by teachers withB.Ed, B.A Ed and M.Ed, PhD qualification

Qualification	Mean	SD	N	Df	T cal	T crit
B.Ed, B.A. Ed	9.80	5.24	50	98	2.44	1.97
M.Ed, M.A. Ed	12.17	5.30	50			

From the data on table7 shows, the mean performance score of students taught by M.Ed and PhD teachers was (12.17). It was higher than the performance of students (i.e. 9.80) taught by B.Ed, B.A.Ed teachers. The mean difference was (2.37). The T-test analysis computed showed that t-calculated (2.44) was greater than t-critical (1.97) at P<0.05. This implies that the null hypothesis was not retained. It was rejected because there was significant difference in the performance of students taught by teachers with additional higher degree qualification such as master's and Doctoral degree in Education/English.

Table 8: T-test Analysis Showing the Performance of Students taught by teachers with B.sc, B.A, M.A Qualification

Qualification	Mean	SD	N	Df	T cal	T crit
B.sc, B.A. M.A	9.51	4.19	50	98	3.03	1.97
B.sc Ed, B.A Ed, B.sc. Ed, M.A Ed, M.sc Ed,M.Ed	12.17	5.30	50			

Significant at P<0.05

The data on table 8 showed that the mean performance score of students taught by B.sc Ed, B.A Ed, M.A Ed and M. Ed teachers (12.17) was higher than the mean performance score of students taught by B.sc, B.A, and M.A teachers (9.51) with a mean difference of 2.66. The t-test analysis computed revealed that the t-claculated (3.03) was greater than the t-critical (1.97) at P<0.05. This means there was significant different in the performance of students taught by teachers who had educational qualifications such as B.sc Ed, B.A, Ed, M.A. Ed and M. Ed degrees.

Table 9: T-Test Analysis Showing the Performance of Students taught by Professional and Non-Professional Teachers

Variables	Mean	SD	N	Df	T cal	T crit
Non-Professional Teachers	6.97	3.38	10	18	7.91	1.91
Professional Teachers	11.01	5.30	10			

Significant at P< 0.05

From the data on table 9 the mean performance score of students taught by professional teachers (11.01) was higher than the mean performance score of students taught by non professional teachers (6.97) with a mean difference of 4.04. The t-test analysis computed revealed that the t-calculated (7.91) was greater than the t-critical (1.98). This implies that there was significant difference between the performance of students taught by professional teachers and those taught by non- professional teachers. Hence the null hypothesis postulated for the research was rejected at P<0.05.

Table 10: Showing Teachers' Years of Experience and the Performance of Students in English Language.

Teachers' Years of Experience	N	SD	SD	Df	T cal	T crit
Students taught by teachers with 1-5year experience	50	2.28	1.34	98	3.52	0.10
Students taught by teachers with 6-15years experience	50	3.04	0.72			

Significant at P< 0.05 level of significance

Table 10 has revealed that the mean score of student taught by teachers who had 1-5years teaching experience is 2.28 while 6-15years teaching experience is 3.04. In other words, the mean score of the students taught by teachers with teaching experience of between 6-15years was higher than that of students taught by teachers with teaching students taught by teachers with teaching experience between 6-15years performed better than those taught by teachers with teaching experience between 1-5years.

DISCUSSION OF FINDINGS

The findings of this study revealed that students taught by teachers with 6-15years teaching experience performed better than students taught by teachers with 1-5years experience. The mean difference was 0.76. This is an indication that teachers' years of experience is a measure of quality and it is imperative in the achievement of students' academic, performance. This supports Akinsolu (2005) who advocated that experienced teachers need to be retained in schools if higher productivity is to be obtained because learners achieve more from these teachers.

The findings of this study has revealed that students taught by teachers with professional teaching qualification in Education such as B.Ed, B.A Ed, B.sc Ed, M. Ed, M.A Ed, M.sc Ed and PhD performed better than those taught by non professional teachers without teaching qualifications. This implies that teachers' qualification has significant impact on students' performance in English language. This is in line with the findings of Akin 2013, Van den Bergh and Roos (2014) and Boyd et al 2008, Wiki (2003) and Abe and Adu (2013) who found out that teachers' qualification contributed to the improvement of students' scores in their academic performance. This finding also corroborates with Edn and Kaln who revealed in their study that significant difference existed in the performance of students taught by graduates with teaching qualification and those taught by graduates without teaching qualification. This is an alteration to the fact that no one can give what he/she does not possess quality teachers constantly to strive to possess all the requisite training and knowledge required to discharge their duties effectively and efficiently.

CONCLUSION

The study has empirically revealed that teachers' qualification and experience are major variables that can affect students' academic performance in English. It has also shown that teacher quality is a panacea for attainment of educational goals and objectives. It is therefore not out of place for the National Policy on Education (2009) to have equivocally stated that no educational system can rise above the quality of its teachers. Teachers, therefore, need to constantly seek for ways of improving their knowledge, techniques, and pedagogical skills by undergoing one form of in-service training or the other on the job.

Recommendations

The following recommendations were made based on the findings of the research;

- Federal and state governments should ensure that only qualified teachers i.e. graduates with teaching qualification should be employed to teach English in Colleges of Education.
- All non-professional and unqualified teachers should be encouraged to pursue their post graduate studies such as Post Graduate Diploma in Education, Master's and Doctoral degrees in English/Education. This will help to improve teachers' quality of teaching and consequently improve the performance of students and ultimately, the quality of teacher education in Nigeria.

- Teachers should be encouraged to participate in pedagogically-oriented and content-oriented professional development activities to improve the quality of their teaching and consequently the performance of their students in tests and examinations.
- Teachers should be encouraged to constantly seek to update their knowledge and skills through workshops, seminars and conferences. This will keep them abstract of the current trends in English language teaching.

References

Abe T.O & AduE.l (2013). Influence of Qualification on Development and Assessment of Computer Programmed Instructional Package on Energy Concept in Upper Basic Technology in Ekiti State, April J. Sci. Technol.,3 (6): 611-618

Akinsolu, A. O (2005). Resource utilization and internal efficiency of public secondary schools in Osun state. Nigeria. Unpublished PhD dissertation. Department of Educational Management, University of Illorin.

Adeyemi T.O (2014). Research Methods and Theses writing in educational studies Lagos New Haven Pub., 3-4.

Ajayi, K. (1989). Educational Development and Management in Nigeria since Independence Ibadan: Vantage Publication Ltd.

Akinfe, E. Olofinniyi, O. E. and Fashiku, C.O. (2012). "Teachers' Quality as Correlates of Students' Academic Performance in Biology in Senior Secondary Schools in Ondo State, Nigeria. " Online Journal of Education Research. Volume 1, Issue 6.

Akiri, A.A. 2013. Effect of teachers' effectiveness on students' academic performance in public secondary schools, Delta state, Nigeria. Journal of Educational and social Research. 3(3): 105-112

Bajah, S.T. (1979). " Correlates of Students' Extrinsic School Environment Factors with Level of Attainment in a Standardized Test in Chemistry. " Journal of the Science Teachers' Association of Nigeria (STAN), Vol. 18. No.1

Boyd, et al, Lankford H. Loeb S. Rockoff J, 2008. The narrowing gap in New York City teacher qualifications and its implications for student achievement in high-poverty schools. Journal of Policy Analysis and Management, 27(4) 793-818.

Curwood, J.S. 2014. English Teachers' Cultural models about Technology: A Microethnographic perspective on Professional Development. Journal of Literacy Research 46(1) 9-38.

Firestone, W.A 2014. Teacher evaluation policy and conflicting theories of motivation. Educational Researcher. 43(2): 100-107

Harris, O. & Sass, T.R. (2006). Value-added models and the measurement of teacher quality. Unpublished manuscript.

Harris, O. & Sass, T.R (2011). "Teacher Training, Teacher Quality and Student Achievement." Journal of Public Economics. 95 (7)

Hallak, J. (1990). Investigating in the Future: Setting Educational Priorities in the Developing world. Paris. UNESCO-IIEP.

Hanushek, E.A &Rivkin, S.G. (2006). "Teacher Quality". In Hanushek, E. & Welch, F. (2006). (Ed). Handbook of the Economics of Education Edition 1, Volume 2, Number 2. Elsevier: Netherlands.

Jordan, H.R., Mendro, R.L, &Weersinhge, D. (1997). Teacher effects on longitudinal student achievement: A preliminary report on research on teacher effectiveness. Paper presented at the National Evaluation Institute, Indianapolis, IN. Kalamazoo, MI: CREATE, Western Michigan University.

Lougran, J. 2014. Professional developing as a teacher education. Journal of Teacher Education. 65(4) 271-283

Federal Republic of Nigeria (2009). National policy on education.

National Commission on Teaching and America's Future (NCTAF) (1996). What matters most: Teaching for America's Future. New York: Author.

Mohammed .S. & Yusuf, H.O. (2015) "Teacher Quality and the performance of Pupils in Reading Comprehension in Primary Schools in Kaduna, Nigeria" African Journal of Humanities Vol.2 (2) June, 2015: Kaduna State University, Pyla-mak Services Ltd.

Obanya, P.A.I. (1982). Teaching and Cheating an Inaugural Lecture Delivered at the University of Ibadan.

Obannaya, U.I 2009: The influence of Teachers Background. Professional Development and Teaching Practices on Students' Achievement in Mathematics in Lesotho Masters Dissertation, Unpublished Pretoria: University of south Africa

Okoye, N.S. Momoh, S.O. Aigbomian, D.O & Okecha, R.E. (2008). "Teachers' Quality Instructional Strategies and Students Performance in Secondary School Science." Journal of Instructional Psychology. Volume: 35 Source Issue: 2

Raw, V.K (2003). Quality Teaching Dew Delhi: APH Publishing Company.

Rivkin, S.G., Hanushek, E.A., & Kain, J.F. (2000). Teachers, schools and academic achievement. Working paper 6691 (revised). Massachusetts: National Bureau of Economic Research.

Richardson, A.R 2008. An Examination of Teacher Qualifications and Students Achievement in Mathematics. Masters Dissertation, Unpublished Alabama Auburn University.

Sanders, W.L, & Rivers, J.C. (1996). Cumulative and residual effects of teachers on future students academic achievement. Knoxville: University of Tennessee Value-Added Research and Assessment Center.

Teachers Registration Council. (2004). Teacher Code of Conduct.

Unanma, AO, Abugu, HO, Dike RC, Umeobike UC 2013. Relationship between teachers educational qualifications and students achievement in chemistry: A case study of Owerri West LGA. Journal of Research and Method in Education. 4(1) 05-10

Van der Bergh, L., Ros A. 2014. Improving teacher feedback during active learning effects of a professional development program. American Education Research Journal. 5(4): 722-809

Wiki, M. (2013). Teaching qualification Retrieved from http://en.wikipedia.org/wiki/teaching qualification on 4/4/13

INTEGRATING A NEW ASSESSMENT STRATEGY TO IMPROVE DIDACTIC OUTCOME AND SELF LEARNING IN PHARMACOTHERAPY COURSES IN ISTANBUL KEMERBURGAZ UNIVERSITY

Nibal Abunahlah[1], Abdullah Olgun[1,2], Akgül Yeşilada [3]

[1]Istanbul Kemerburgaz University, School of Pharmacy, Department of Pharmacology, Istanbul, Turkey.
[2]Istanbul Kemerburgaz University, School of Pharmacy, Department of Biochemistry, Istanbul, Turkey.
[3]Istanbul Kemerburgaz University, School of Pharmacy, Department of Pharmaceutical Sciences, Istanbul, Turkey.
nibal.abunuhlah@kemerburgaz.edu.tr

Abstract

Introduction:
Pretest/posttest evaluation is a concise and effective direct evaluation tool that aids to improve student self learning.

Methods:
Pretest was administered before providing all pharmacotherapy topic information. Posttest was done after tutoring the topic. Pretest/posttest questions were similar. Handbook and lecture notes were provided. The tests were developped according to different outcome measures that are relevant to student achievements such as tapping memory, problem solving and comprehension. The students' marks for the pre- and post-test were compared for four weeks and the change in the pretest marks weekly were assessed using paired samples - T test.

Results:
Significant differences between students' marks in the pretest appeared weekly, while the difference between pre- and post-test was significant only in the first week and declined in the following weeks.

Conclusion:
Pretest/posttest pharmacotherapy evaluation tool approved its effectivety in improvement of student self learning. Integration of this tool in the other pharmacotherapy courses is highly recommended.

Keywords: assessment strategy, pharmacotherapy, self learning.

INTRODUCTION

Active learning strategies in pharmacy education are commonly used in United States[1] and may be more effective than traditional, didactic lectures[2]. Istanbul Kemerburgaz University (IKU) and the University of Colorado (CU) have collaborated to develop a progressive pharmacotherapy course that was patient-centered and used active learning strategies.

Three CU faculty members developed the content of pharmacotherapy I course, structure, learning methods, assessments, and evaluations were patient-centered and incorporated contemporary educational approaches that are not very common in Turkey. The CU faculty traveled to Istanbul to teach the course in Spring 2015. Faculty at IKU participated in all course preparations, sessions, activities, and evaluations. The course was condensed into five weeks. The daily structure included 4 hours of knowledge acquisition and application including didactic lectures, case discussions, group assessments, and student-directed learning activities and two hours of communication-based activities. Evaluations include eleven quizzes, three assessments of communication skills, and one final examination.

During our observation of Pharmacotherapy I course, we noticed that students were dependent mainly on the information they recieved from their teachers. Their ability to derive the important information from lecture notes and handbook were very weak. They always required instructions from their teachers.

During the preparation for Pharmacotherapy I and II courses, in order to improve self learning and life long learning skills of students, we decided to implement pre-test assessment and therefore introduced pretest/posttest evaluation method.

Pretest/posttest evaluation is a concise and effective direct evaluation tool that aids to improve students' self and life long learning skills. It also increases the attendence of students. Pretest evaluates the knowledge/skill level before the student is instructed about all relevant information.

METHODS

Students were supplied by whole study materials which include handbook and lecture notes and informed about the topic that will be instructed during following week. The questions in pre- and post-tests were prepated according to different outcome measures that are relevant to student achievements such as tapping memory, problem solving and comprehension. Questions asked in pre- and post-tests were strongly similar in structure and content. The students' marks for the pre- and post- test were compared for four weeks and the change in pretest marks were assessed using paired samples - T test. The students' marks for the pre- and post- test were compared for four weeks and the change in the pretest marks weekly were assessed using paired samples - T test.

To measure students attitudes towards the course evaluation criteria, students were requested to complete a seven-item questionnaire regarding the evaluation method of the course, using a 5 point Likert scale (strongly agree to strongly disagree) Table I.

Table I: Pretest/Posttest student's evaluation survey

No		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	The pre/post test method of evaluation is more preferred than single mid term exam.					
2	The pre/post test evaluation method improve my self learning skills					
3	The pre/post test method is the one way to ensure the continuity of education					
4	The pre/posttest questions are concentrated in the main topic outcomes					
5	Pre/post help me determine where is my skill and knowledge deficiencies exist and where they most frequently develop.					
6	Pre/post test method is more time and effort consuming					
7	recommended using pretest /posttest evaluation method for the following pharmacotherapy courses					

RESULTS

Weekly students' marks for pretests were compared and a statistically significant difference was found between the first and second weeks. Although the differences were not significant between second and third week, it continued to be significant between the third and fourth week and there is great significance between the first week and fourth week as seen in Table II.

The differences between pretests and post tests were found significant only in the first week as seen in Table III.

Concerning student attitudes; 61,3 % of students agreed or strongly agreed that the pre/post test method of evaluation is more preferred than a single mid term examination, 67,8% agreed or strongly agreed that the pre/post test evaluation method improved their self learning skills, 38,7% neither agreed nor disagreed.

Approximately half of the students agreed or strongly agreed that the pre/posttest questions were focused on main outcomes of the topic. Of the students, 67,7% agreed or strongly agreed that pre/post tests helped them determine their weaknesses in their knowledge and skills,74,2% agreed or strongly agreed that pre/post test method is time and effort consuming and 45,2% agreed or strongly agreed to recommend to use this technique for the following pharmacotherapy courses (Table IV).

We also observed an increase in their attendences with the implementation of pre/post test strategy (data not shown).

Table II: student's pretests comparison

Pretests	Mean	Std.deviation	P value
First week pretest	3,07	+_ 2,37	0,00*
Second week pretest	4,79	+_ 3,52	
Second week pretest	4,79	+_ 3,5	0,906
Third week pretest	4,72	+_ 4,1	
Third week pretest	5	+_ 4	0,019*
Fourth week pretest	5,9	+_ 4,1	
First week pretest	3,19	+_2,31	0,001*
Fourth week pretest	5,93	+_4,16	

Table III: Student's pretests/postests comparison

Tests	Mea n	Std.deviation	P value
First week pretest	6,35	+_ 2,29	0,00*
First week post test	8,86	+_ 1,11	
Second week pretest	4,16	+_1,62	0,582
Second week posttest	4,91	+_1,5	
Third week pretest	7,2	+_ 2,4	0,961
Third week posttest	7,2	+_ 1,54	
Fourth week pretest	8,8	+_1,06	0,596
Fourth week post test	8,71	+_0 ,76	

Table IV: Studen's Attitude Towards Pretests/Posttests Evaluation method

Question NO.	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	29%	32,3%	16,1%	9,7%	6,5%
2	22,6%	45,2%	16,1%	6,5%	3,2%
3	9,7%	22,6%	38,7%	16,1%	6,5%
4	3,2%	45,2%	22,6%	16,1%	6,5%
5	12,9%	54,8%	16,1%	9,7%	0%
6	45,2%	29%	9,7%	9,7%	0%
7	19,4%	25,8%	29%	12,9%	6,5%

DISCUSSION

The pre/post test method is a way to ensure the continuity of education. The fact that there was a weekly improvement in the students' pretest results, indicates improvement in their ability of self learning and derive the important knowledge from textbooks and lecture notes. The students started to develop their own strategies for self learning by making proper summaries, monitoring and evaluating their own performance. With time the students became able to derive required learning outcomes by themselfs, and the differences between pretest and posttest marks declined with time.

The fact that students had a positive attittude towards this method of evaluation as they prefered it more than midterm examinations, could suggest that they were more self motivated and satisfied by the improvement of their self learning and life long learning skills, even though it required more effort and preparation/study time.

CONCLUSION

The results of this study could suggest that pretest/posttest pharmacotherapy evaluation tool can be effective in the improvement of student self learning, self motivation, satisfaction and attendence. Integration of this tool in other pharmacotherapy courses is highly recommended.

REFERENCES

1. Lucas KH, Testman JA, Hoyland MN, et al. Correlation Between Active-Learning Coursework and Student Retention of Core Content During Advanced Pharmacy Practice Experiences. Amer J Pharm Educ 2013;77(8):Article 171.

2. Stewart DW, Brown SD, Clavier CW. Active-Learning Processes Used in the US Pharmacy Education. Amer J Pharm Educ 2011;75(4):Article 68.

STANDARDIZATION OF COOPERATIVE EDUCATION PROCESSES VIA MANAGEMENT INFORMATION SYSTEMS

Mehmet Bilgehan ERDEM
Department of Industrial Engineering,
Sakarya University,
Sakarya, Turkey
bilgehan@sakarya.edu.tr

Merve CENGİZ TOKLU
Department of Industrial Engineering,
Sakarya University,
Sakarya, Turkey
mtoklu@sakarya.edu.tr

Abstract: Various university programs around the world are in need of cooperative education to meet the growing needs of the global business. Short-term internship experiences are inadequate especially in engineering programs. Cooperative education can be added in curriculum of universities to increase collegians' work experience and to develop university-industry cooperation. In this study, a conceptual model is built for cooperative high education process via using management information system to facilitate and simplify the whole cooperative high education process. The proposed model is useful both industry and universities.
Keywords: Cooperative education, Management information systems, Standardization

INTRODUCTION

Developments in the industry and service sector has led to the need for experienced staff. Short-term internship experience is inadequate especially in engineering programs. Cooperative education (co-op) that combines classroom learning with learning at the workplace aims to fulfill the need of highly skilled labor in competitive industry.

Co-op was developed at the University of Cincinnati (UC) in 1906 by Herman Schneider. As shown in Table 1. there are many co-op applications all over the world applied over a century; university of Waterloo, Northeastern University, Wentworth Institute of Technology, Georgia Institute of Technology, Drexel University, Purdue University and etc. Co-op education in Turkey started with TOBB University of Economics & Technology. Gaziantep University, Sakarya University ("UMDE", "3+1" & "7+1" programs), Bahçeşehir University and Süleymanşah University implement co-op education.

Table 1. Universities with over-a-century co-op experience

2006	University of Cincinnati
2009	Northeastern University
2009	Drexel University
2009	Kettering University
2011	University of Detroit Mercy
2012	Georgia Institute of Technology
2012	Rochester Institute of Technology
2014	University of Akron
2019	Drexel University

Co-op is a learning method of combining conventional education with industrial experience. As mentioned above, cooperative education models are being implemented throughout the world in different ways, depending on national and local circumstances, national policies on vocational education, social and economic structures, historical contexts and school and university systems (Arslan et al., 2013). Although there are many co-op applications all over the world for a long period of time, a rational structure for monitoring, analysis and management of this system does not seem to appear both in related literature and industry. An MIS is developed to enable evaluating coop education programs and to fulfill the potential of coop partners such as, students, employers and academics.

Difference between co-op and internship programs

Co-op learning model consists of students performing a full-time paid employment as a structured part of their program of study. Co-op programs help students and academics to integrate industrial field experience and academic experience (Weisz and Smith, 2005).

Co-op experiences are either full-time alternating periods of work and school or part-time combining work and school. Co-op experiences also supervised by a field related professional in partner institution. Usually co-op students are offered at higher salaries when they apply to a related position.

Internship programs often carry on in the summer. It can be full or part-time, paid or unpaid, depending on the employer and the career field. Students don't have to miss a semester or two to complete an internship. An important point is that, internships are usually limited to one area of responsibility ("Co-Op vs. Internship: What's the Difference?", 2010).

Benefits and challenges of co-op education

The benefits to all partners of co-op programs have been mentioned below. Academic benefits to students include increased disciplined thinking improved motivation to learn and problem solving skills, an ability to apply theory to practice and improved academic grades (Weisz and Smith, 2005). Furthermore students may practice in human relations skills, clarify of career goals, Improved self-reliance, self-confidence, responsibility, improve Contacts with potential employers (Kerka, 1989). Higher starting salary after graduation is the one of the important benefits of co-op education. Benefits to partner institutions are; effective screening, selection, and recruitment, higher employee retention and productivity, highly motivated employees with realistic expectations, lower recruitment and training costs, opportunity to influence curriculum design and content, improved public relations (Kerka, 1989). Benefits to academicians are; finding potential sources for fundraising, finding project partner, updating of the curriculum, developing university-industry cooperation.

Despite the many benefits of co-op education there are several challenges in practice. For instance, academic supervisor's workload is usually high and mostly undervalued for this reason supervisor may not have the time to check all work placements thoroughly enough to ensure that the appropriate learning opportunities are being provided for students. Similarly, mentors in PIs may also not have the time because of their responsibilities to the companies. Finding work placements are difficult. Work in mentoring cooperative education is not recognized nor it is rewarded through the process of academic promotions (Kerka, 1989). Students may not spend their time productive due to lack of tasks.

PROPOSED CO-OP MANAGEMENT MODEL

In this study a conceptual model is built for cooperative high education process via using management information system to facilitate and simplify the whole cooperative high education process. A step-by-step application scheme for proposed co-op management model is illustrated in Figure 1. First step is related to acquiring demands. These demands include student, partner institutions and academicians. For instance, a partner institution might want to prefer an academician who works in a specific field and also a student might want to work a specific department of a company. Following the having request co-op management commission in relevant department of university analyze whole demands. Annual protocols signed with the appropriate institutions. In the fourth step student, partner institutions and academicians is matched each other. In the co-op education process the whole of partners give reports. At the end of the term, final grades of student, partner institutions and academicians are determined. Partner institutions' and academicians' final grade light the way for planning future periods of co-op education. These steps draw a frame for co-op education process and the frame might go into more detail due to specific university department.

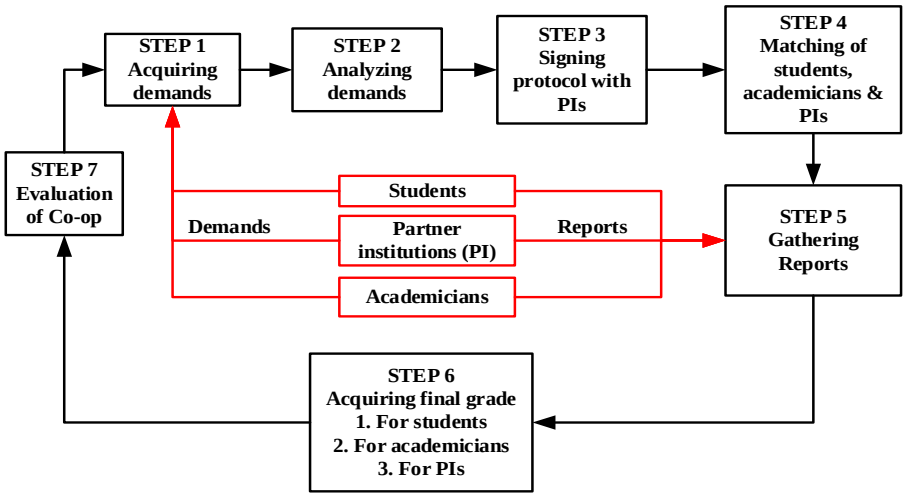

Figure 1: Proposed steps of co-op education

A MANAGEMENT INFORMATION SYSTEM FOR CO-OP EDUCATION PROCESSES

Co-op model has a wide range of applications in the world and as well as Turkey. Although there are many co-op applications all over the world for a long period of time, a rational structure for monitoring, analysis and management of this system does not seem to appear both in related literature and industry. An MIS is developed to enable evaluating co-op education programs and to fulfill the potential of co-op partners such as, students, employers and academics.

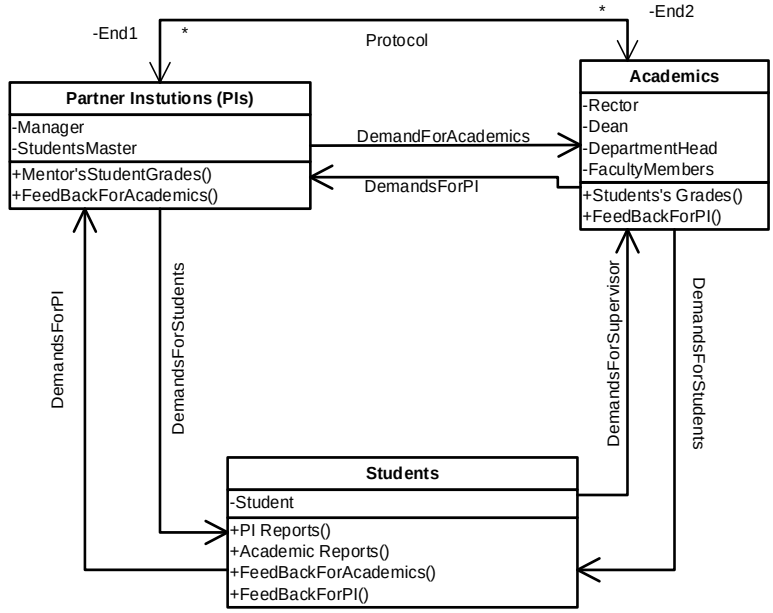

Figure 2: UML Diagram of current co-op workflow

In current co-op applications mostly the data and information exchanged by the partner (institutions, students, academicians etc.) are carried out by universities' staff without having an integrated MIS. Current workflow of the process and information exchange of the partners are shown in Figure 2.

In the proposed MIS model for management and standardization of co-op processes, data and information exchange by the partners are carried out by one central information processing agent which is defined by the authors as SCOOP. As seen in Figure 1. steps of co-op process involves different types of demands, protocols, reports and feedbacks. The proposed SCOOP model enables to manage all inquiries including demands, protocols, reports, feedbacks and etc. in one central information processing agent as shown Figure 3. All interaction between partners are performed via a user interface. Data gathered from different partners and processes are stored in a central database. Any partner who wishes to get a customized report will be able to access a flexible reporting tool with the help of this database. Also a blind feedback process will be held by SCOOP.

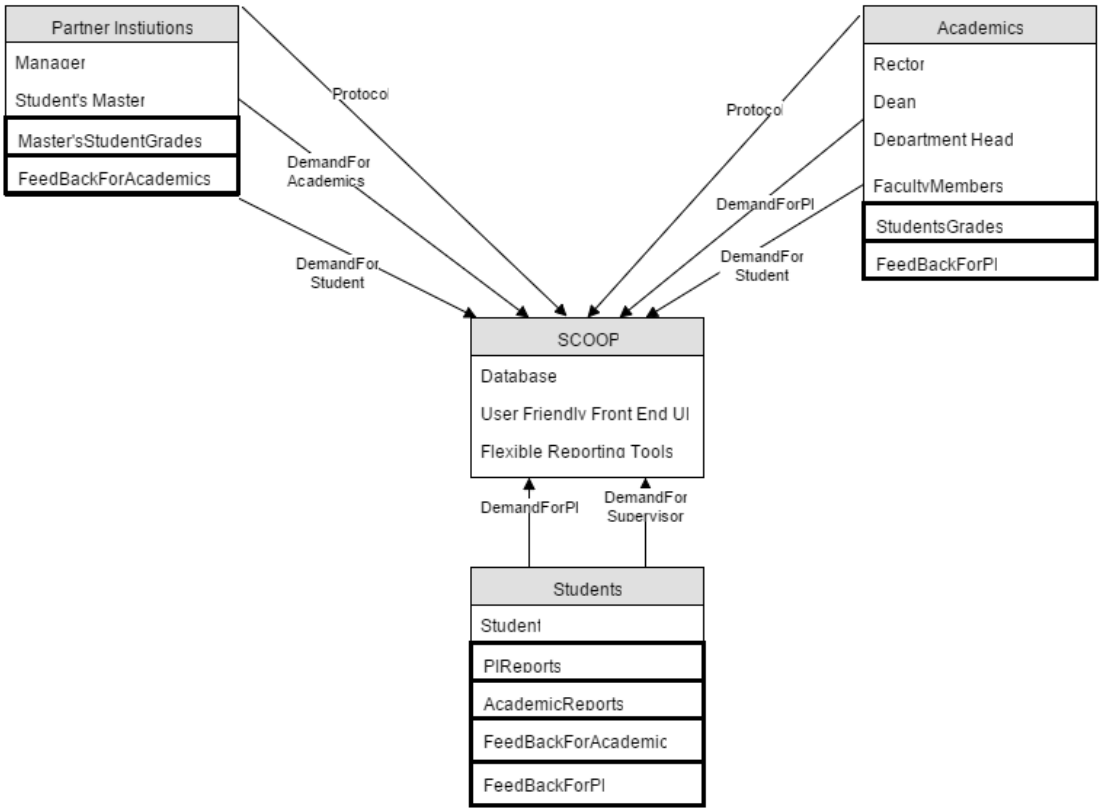

Figure 3: Proposed SCOOP - standardization of co-op management agent model

CONCLUSIONS

Co-op education model is a combined education model including both classroom education and work place education. This education model has a wide range of application in the world and in Turkey. In this study, authors have developed an integrated MIS model for management of co-op processes. The proposed model has been presented to cooperative learning practitioners in a university and the model was further developed according to feedback from them. As a result of bilateral negotiations with cooperative learning practitioners, it has kindly agreed to the applicability of the model. As mentioned before co-op learning model is applied in the different universities around the world. It is hoped that the proposed model can be used by all practitioners who intend to enhance their co-op management experience. As a further study, authors anticipate a cooperative learning quality system to be developed under favor of the proposed process standards model.

REFERENCES

Arslan, R., E., Ö., O'mahony, P., Parsons, R., Bono, S.D., Battıpaglia, A. and Jociunas, J. (2013), "A Comparative Study: Challenges and Opportunities for European Union Dual Vocational Training Systems", *Journal of Cooperative Education and Internships*, Vol. 47 No. 01, pp. 4–18.

"Co-Op vs. Internship: What's the Difference?" (2010), , available at: httpcampus-to-career.com20101005co-op-vs-internship-what%E2%80%99s-the-difference (accessed 30 June 2015).

Kerka, S. (1989), *Cooperative Education: Characteristics and Effectiveness*.

Weisz, M. and Smith, S. (2005), "Critical changes for successful cooperative education", *Proceedings of the 28th HERDSA Annual Conference*, pp. 605–615.

