ИНФОРМАЦИОННЫЕ ТЕХНОЛОГИИ В ОБРАЗОВАНИИ

THE IMPACT OF QUALITY CONTENT EDUCATIONAL RESOURCES ON STUDENTS' ACADEMIC ACHIEVEMENT: SURVEY RESEARCH (ON THE EXAMPLE OF NORTHERN BORDER UNIVERSITY, ARAR)

Feras M. Al-Madani

Northern Border University, Arar, Saudi Arabia.
E-mail: fmabm@yahoo.com; fmabm@hotmail.com

Abstract. *Introduction.* Academic achievement is reflected in marks (points) achieved in the disciplines studied and it assumes that the student has acquired the required set of skills and knowledge, which he or she can use while performing educational and professional tasks after learning a particular discipline or a group of disciplines. This means that the concept of "academic achievement" represents measuring the student's ability to comprehend academic programmes in the class or independently.

The *aims* of the present research were the following: to determine the ability of students to be active users of educational databases and their elements, which are considered to be effective especially in this type of educational activity; to identify the opportunities to improve academic achievement and the quality of academic curriculum implementation (in accordance with the necessary content) through digital educational content.

Methodology and research methods. The present research is based on the field survey methodology. Empirical data were collected through questionnaires and face-to-face interviews. The validity of the collected material was verified through the method of mathematical statistics.

Results and scientific novelty. It is known that information technology today is one of the most important factors, which can have a powerful impact on the quality of the education system in universities. The research conducted at the Northern Border University (Arar, Saudi Arabia) investigated the following questi-

ons: how the databases available at the Saudi Digital Library assist students of various specialties (faculties) in their studies; what the real contribution of the databases to the training of future professionals is; how learners define their goals and needs by using these databases. The processed questionnaire and interview results demonstrated that for most students e-learning content is not a tool to improve academic performance. The students' satisfaction with the offered e-learning content was very low. Meanwhile, the students noted that they needed accessible and quality digitised educational information. However, they lack the information competency to find, store and apply information in its various forms. This competency is not limited only to the skills to work with the computer (all young people possess this skill today) – it includes the skills to systematise and structure the received information; critical attitudes towards it; ability to summarise and draw conclusions. It is also important to have easy and user-friendly database tools. Thus, it is necessary to provide further guidance for learners on effective work with digital databases; to develop students' research skills; to carry out specialised workshops in order to motivate students to use digital educational resources.

Practical significance. The present research materials can be useful for specialists developing university digital databases based on curricula mastered by students.

Keywords: academic achievement, databases, Saudi Digital Library, technology usage in education, curriculum.

ВЛИЯНИЕ КАЧЕСТВА КОНТЕНТА ЦИФРОВЫХ ОБРАЗОВАТЕЛЬНЫХ РЕСУРСОВ НА АКАДЕМИЧЕСКУЮ УСПЕВАЕМОСТЬ СТУДЕНТОВ: ОБЗОРНОЕ ИССЛЕДОВАНИЕ (НА ПРИМЕРЕ СЕВЕРНОГО ПОГРАНИЧНОГО УНИВЕРСИТЕТА, АРАР)

Ферас М. Аль-Мадани

Северный пограничный университет, Арар, Саудовская Аравия.
E-mail: fmabm@yahoo.com; fmabm@hotmail.com

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

133

Аннотация. *Введение.* Академическая успеваемость отражается в оценках (присвоенных баллах) по изучаемым предметам и предполагает, что студент овладел требующимся набором навыков и знаний, которые он после ознакомления с конкретной дисциплиной или группой дисциплин может использовать при выполнении образовательных и профессиональных задач. Иными словами, понятие «академическая успеваемость» подразумевает измерение уровня способности студента осваивать содержание учебных программ как в очном режиме, находясь в аудитории, так и самостоятельно.

Цель исследования, представленного в статье, заключалась в определении способности студентов быть активными пользователями учебных баз данных и их элементов, от которых зависит эффективность этого вида образовательной деятельности; а также в выявлении возможностей повышения успеваемости и качества академического усвоения учебных программ (при соблюдении необходимого охвата их содержания) с помощью цифрового образовательного контента.

Методология и методы. Работа выполнялась на основе методологии полевого исследования. Сбор эмпирических данных производился посредством анкетирования и личных интервью. Достоверность собранного материала проверялась методом математической статистики.

Результаты и научная новизна. Известно, что информационные технологии сегодня – один из важнейших факторов, которые могут оказывать мощное воздействие на качество системы образования в вузах. В ходе исследования, проведенного в Северном пограничном университете (Арар, Саудовская Аравия), выяснялось, насколько базы данных, доступные в Саудовской цифровой библиотеке, помогают студентам различных специальностей (факультетов) в учебе, каков их реальный вклад в профессиональную подготовку будущих специалистов и каким образом обучающиеся определяют свои цели и потребности, обращаясь к этим базам данных. Обработанные результаты анкетного опроса и интервью показали, что для большинства респондентов предлагаемый электронный образовательный контент не является инструментом улучшения успеваемости. Степень удовлетворенности им оказалась весьма низкой. Между тем студенты отметили, что нуждаются в доступной и качественной оцифрованной учебной информации. Однако им не хватает информационной компетентности, проявляющейся в способности находить, хранить и применять информацию в различных ее видах. Причем эта компетентность не ограничивается только владением навыками работы с компьютером (которыми сегодня обладают все молодые люди) – она включает умения систематизации и структурирования получаемой информации; критическое отношение к ней; способность резюмировать и делать выводы. Важно также наличие простых и удобных инструментов работы с базами данных. Таким образом, необходимы дополнительные консультации обучающихся

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

134

о том, как эффективно работать с цифровыми базами данных; развитие исследовательских навыков студентов; проведение мастер-классов, мотивирующих к использованию цифровых образовательных ресурсов.

Практическая значимость. Материалы исследования могут быть полезны специалистам, разрабатывающим университетские цифровые базы данных, основанные на учебных программах, осваиваемых студентами.

Ключевые слова: академическая успеваемость, базы данных, Саудовская цифровая библиотека, использование технологий в образовании, учебная программа.

Introduction

Academic achievement is considered as a set of educational goals to be achieved by the student or educational establishment [1], and is greatly linked to the personal capabilities of the student, through his or her ability to complete a specific action through sensory and mental actions [2]. Information technology tools are considered one of the important enablers of academic achievement for the students, where these tools work on the swift exchange and constant availability of information for the students [3]. In this framework, databases are very important, especially with the swift increase in the amount of intellectual production by the researcher. The databases enable students to make full and up-to-date use of related information of the curricula that lead to the development of their abilities and skills in academic achievement [4].

The Saudi Digital Library was established with the aim of providing advanced information services in order to make available digital information sources in various forms, to make them accessible to faculty members, researchers and students in the postgraduate and undergraduate levels in Saudi universities, higher education institutions, scholarships, and employees of the Ministry of Education of teachers, the Saudi Digital Library provides an

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

135

umbrella for all Saudi universities to negotiate with publishers. The Saudi Digital Library represents the largest gathering of digital information sources in the Arab world, as it currently contains more than (446) thousand digital books with its texts. It has (169) an Arabic and international database that includes the full texts, academic articles, more than (5,200,000) millions of theses, (461) thousands of multimedia including images and scientific films in various scientific disciplines that fall within the scope of interest of educational institutions within more than 300 global publishers [5].

Research Problem and Study Rationale

The study problem is the attempt to identify the patterns of benefit to students in relation to the use of the databases provided by the university, in order to measure the effect on academic achievement in their various specialisations, and the effect this has on the efficacy of the tertiary education system and the flourish in the tertiary education movements. It is possible to formulate the Study Problem as follows:

– What are the patterns of benefit to Northern Border University students from the use of databases and what is the extent of measuring their effect on academic achievement?

Study Significance

1. Reveals the needs by Northern Border University students to use databases.

2. The study reveals the effect of using databases on increasing the academic achievement of students.

3. The study explains the extent of databases use.

4. The study shows the importance of databases to students in relation to academic achievement.

5. Reveals the effect of databases on university students in relation to supporting study curricula.

6. Sheds light on the difficulties facing the students regarding databases and the obstacles that may prevent the sufficient benefit therefrom.

7. Helps identify the characteristics of this important category of beneficiaries, which leads to planning to fulfill their future needs.

Accordingly, the study aims to:

Verify the patterns of use of databases and their effect on the students' academic achievements through:

– Identifying the motives and needs of university students to use databases in various coverage of topics.

– Identifying the need of students to use databases.

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

136

– Investigating the extent of student use of databases in study, research and curricula support.

– Identifying the reasons hindering the student use of databases to increase academic achievement and support study curricula.

Study Questions

In order to achieve the study objectives, it is necessary to answer the following questions:

1. What is the effect on students of using databases to increase academic achievement and support the study curricula?

2. What are the motives of university students to using databases for academic achievement?

3. To what extent do students need to use databases for academic achievement?

Study Field and Limitations

The study included all students from both genders in all university specialisations, where a systematic random sample of students was used from each of:

1. Faculty of Education and Arts.

2. Faculty of Business Administration.

3. Health Faculties including: Faculty of Medicine, Faculty of Applied Medical Sciences, Faculty of Nursing and Faculty of Pharmacy.

4. Faculty of Science.

5. Faculty of Engineering.

6. Faculty of Home Economics.

Methodology, Tools and Procedures

The study relied on applying the field survey research methodology for the purpose of studying the patterns of student benefit at Northern Border University, through the use of databases, in order to determine the extent and amount of their academic achievement, as well as determine the extent of benefit in the fields of research, study, supporting study curricula and identify the reasons that may undermine the extent and value of use.

The study relied on the following main data collection tools:

1. Questionnaire, which can be used to identify the patterns of student use of databases, the extent and size of use and the effect to increasing academic achieving.

2. Interview, which is used to verify the validity of the data collected through the questionnaire in order to reach factual results on the actual use by students of databases.

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

137

Literature Review

Shamandy's study aimed to explain the extent of benefit to Sohag University from the repercussions of the information technology era through the execution of one of the projects submitted by the Supreme Council of Universities, which is the Information and Communication Technology Project (ICTP). The study relied on the field methodology through the description, analysis and interpretation of the phenomenon subject of the study. A questionnaire was also used, addressed to the faculty members. One of the most prominent study results is: the first skills the study sample believe they need to train on is the use of the databases of the Digital Library Project, also 65.7% of faculty members and their assistants benefitted from the outputs of (ICTP) projects compared to 34.3% who did not benefit [5].

Wheeler's study showed that databases help push in the opposite direction, from building academic databases in NoSQL format to the relational format. The study also showed that the requirements for shifting to system change may also lead to using a relational database at an advanced stage [6].

Hussain's study investigated the effect of information and communications technology on the academic achievement of the students in the field of chemistry. Fifty students of the ninth grade students were randomly selected from Kohsar Public School & College Latamber, the study recommended the generalised use of information and communication technology in teaching chemistry to achieve higher academic achievement rates [7].

Hsioung's study worked on the Measuring Team Functionality (MTF) database and its effect on a series of academic performance measurements that were acquired from a national university in Taiwan, where the measurements and test results were conducted at a basic mechanical engineering course, in order to provide an objective method for assessing the performance of cooperative learning teams and their suitability for each team member. The database is composed of three sets of data, with every set of data containing the functionality measurements received during an academic term of 18 weeks [8].

Theoretical Framework

Academic achievement aims to determine the student's results for him or her to move to another stage. It also aims to determine the type of study and specialisation to which the student will later move. It also seeks to find out the individual capabilities of the student, in addition to benefiting from the achievement outcomes to move to another academic phase [9].

The social, economic and technological condition of the student is considered to have the biggest effect on the inclination towards academic achi-

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

138

evement. Also, this capacity for academic achievement is linked to elements related to the mental condition of the educated person, the student's desire for knowledge to increase his or her capacity for academic achievement, in addition to the level of self-confidence to achieve the objectives that lead to increasing academic achievement [2]. There are also elements related to the educational established through the provision of the appropriate and effective information and communication technology tools [8, 10], which are considered the basis for the provision, exchange and spread of information, as well as the academic benefit therefrom.

The researcher finds that academic achievement measures the quantity of academic concepts the student has, which is one of the most important indicators on which the educational systems rely to measure the quantity of learning. It is therefore an indicator to the extent of achievement of educational goals. The concept of academic achievement is used to indicate the degree or level of success achieved by the student [10].

Factors Affecting Academic Achievement

Academic achievement is affected by a set of factors that can be negative or positive. Due to the importance of those factors and the role they play in determining the points of weakness and strength in the educational programmes, there were many studies that showed their results on the students' achievements [11], their current inclinations to them and their awareness of their ability to succeed in them. Academic lack of achievement results basically from the inappropriateness of the educational programmes and the nature of their implementation. It is also related to a number of material and environmental human factors. The research results also show the presence of a positive correlation between the patterns of learning and comprehension [12]. It became evident that the pattern used in learning affects the level of comprehension, as when the learning pattern of the student conforms to the learning pattern used by the educator, then academic achievement increases significantly. The student's speed of acquiring and retaining information for a longer period of time and its effect and classification increase effectively.

Assessment of Academic Achievements

Assessment is considered as an essential component of the educational process. It is the process through which we judge the extent of our success in achieving the desired educational objectives and the extent of the students' achievement of those objectives. We resort to assessment after the completion of the programme and the passing of a period of time that may be long or short since its completion. Educators differentiate between the concepts of measuring and assessment [12], where measuring indicates the digital value

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

139

received by the educated, which means the achievement expressed numerically. Accordingly, measuring is a process that cares for quantitative description [13], while educational assessment being described as an organised and planned process that includes issuing judgments. Assessment aims to achieve objectives including:

– Determine the level of achieved desired educational objectives.

– Assessment is a preventive and treatment diagnostic process.

– Assessment is a good indicator to measure the performance of the science teacher and the efficiency of his or her teaching and judge him or her for educational objectives.

– Provides important outputs for academic study and investigation purposes in teaching sciences and their methodologies through research and planning.

– Verify the extent of the student's retention of the outcomes of education that the programme sought to achieve.

– Verify the ability of transferring the educational results gained by students to another situation.

– Identify the failures in the programme.

Effect of Technology on Education

There is no doubt that technology affects all aspects of life, and when technology is mixed with learning, it would have a significant effect on all aspects of the educational process [14], which is represented in the student, who performs the most important axis in the educational process [15]. The effect includes the study curricula that constitute the fixed basis of education. The teacher is considered the element responsible for leading the educational process, who in turn, transfers the technological effect to the methods of teaching.

Effect of Technology on the Student

The use of technology in education affects the student in several positive aspects, such as realising the principle of educational democracy, which guarantees the student space of freedom to be able to choose the suitable specialisation for him or her in addition to being able to choose the courses electronically [16], which gives him or her independence and feeling more self-esteem. The use of technology in education also increases the student's interaction in general, develops his or her positive thinking, as well as facilitates acquiring, understanding and then comprehending various information [17].

Effect of Technology on the Teacher

Modern technology is regarded as an important element to assist the teacher, providing him or her with more information and various forms of knowledge. Using technology, it is easier for him or her to share and spread

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

140

academic material, raise the quality of education and facilitate the acquisition of knowledge to all students [18]. Also, technology facilitates the follow-up of homework by the teacher, assists teachers and facilitates their direction and follow-up of the students, noting that the use of modern technology does not undermine the status and importance of the teacher. The teacher should make more efforts to cope with the fast development in the various forms of technology to be able to utilise them to serve the various aspects of education [19], in order to achieve the highest level of efficiency of knowledge [9]. The use of readable and visual teaching aids contributes to facilitating and simplifying the delivery of information to the students, and therefore more benefit to the student and saving effort and time to the teacher.

Effect of Technology on Teaching Methods and Curricula

Most students prefer to learn using technology for its ease and the abundance of information at any time, and also because of the variety in various types of sciences. Some students may prefer the traditional methods of education, but they may need more effort, time and cost also to acquire the information [11]. The student may rely on the teacher more in case of the traditional methods and means of education, while reliance on the teacher significantly decreases in case of using technology. With respect to curricula, giving up paper books and substituting them with electronic copies facilitates acquiring the eBooks, with the ease of saving, recovering and sharing them [12]. This plays an important role in participating in the development of education and increasing general knowledge among all through facilitating the acquisition of the scientific sources and curricula at any time and for all individuals.

Databases

Databases are comprehensive, complex and intersecting sets of data and information that were saved in a specific electronic order and format, which at all times facilitates handling them through saving, recovering and getting results from them. The types of databases are divided according to topic or data storage forms, whether as full text, extracts or bibliographic data [20]. Databases depend on the principle of saving, analysing and recovering intellectual products, in one or more specific languages at the same time. Databases are characterised with the ability to recover results quickly. Databases have in common the capacity to form a search strategy through various indexes, such as title, author, topics, specialised index, advance search, search using Boolean transactions [21], so that the database provides the ability to search using Boolean transactions, whether "or", "and" or "not". These transactions are used either to narrow the scope of the search or expand it. For example, if "nor" is

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

141

used [22], we mean to narrow the scope of the search, while if "and" is used, we are meant to expand the scope of the search [23, 24].

Statistical Processing

Through the study, the researcher sought to apply the analytical descriptive method with respect to reviewing the main concepts of the thematic axes of the study. The researcher also used the survey study methodology, using the questionnaire tool, designing a set of questions that cover the axes of methods of benefiting the students about the use of databases and its effect on the increased rates of academic achievement and supporting curricula.

Study Community and Sample

Based on the limitations of the study, the study community included a stratified random sample of 425 university students, to analyse the study community and sample according to the following:

– In terms of gender:

Table 1

The distribution of the individuals of the study sample by gender

Gender	Frequencies	Percentage, %
Males	270	63.5
Females	155	36.5
Total	425	100

– With respect to academic specialisations:

Table 2

The distribution of the individuals of the study sample by academic specialisations

Academic Specialisation / Faculty	Frequencies	Percentage	Students actual use / Average
Faculty of Education and Arts	105	24.7	37 (35.2%)
Faculty of Business Administration	35	8.2	17 (48.6%)
Faculty of Medicine, Faculty of Applied Medical Sciences, Faculty of Nursing and Faculty of Pharmacy	80	18.8	63 (78.8%)
Faculty of Engineering	65	15.3	49 (75.4%)
Faculty of Science	110	25.9	91 (82.7%)
Faculty of Home Economics	30	7.1	13 (43.3%)
Total	425	100	270 (63.5%)

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

142

Table 2 shows that the actual and active use of databases by university students is geared towards higher use for the benefit of scientific colleges than for human colleges. Science students are in the first with 82% of the number of students in the faculty, the second – medical students (78.8%), the third – engineering students (75.4%), the fourth – business administration students (48.6%), the fifth – home economics students (43.3%), and in the sixth place are the students of the Education and Arts Faculty (35.2%).

Study Tool

A questionnaire was designed composed of several main parts that included the characteristics of the sample members, the objectives and field of use of databases, in addition to the size of use of databases, the effect of the use of databases on increasing academic achievement, and the increased rates of research and academic pattern while the last part dealt with the reasons that reduce the use of databases.

Tool Validity

The researcher used two methods to verify the validity of the tool:

1. Virtual Validity

After designing the questionnaire, the researcher presented it to a group of specialists in the field of teaching curricula and methods. It included the following: the questionnaire statements belonged to the study objectives and questions, with quality of formulating each statement and the appropriate gradient of the questionnaire.

2. Validity of Internal Consistency

Through verifying the apparent validity of the study tool, the researcher distributed the questionnaire and applied it in the field through personal interviews or e-mail to a stratified random sample of university students to total of (500) questionnaires. When the questionnaires were collected, 425 of them were found valid. The statistical packages programme SPSS was used to calculate Pearson Correlation Coefficient to determine the internal validity of the tool, calculating the correlation coefficient between the mark of each statement in the questionnaire and the overall mark of the part to which the statement belongs.

Taking into account that if the value of the correlation coefficient was less than (0.25) it shall be considered low, while if the value is between (0.25–0.49) it is considered moderate and if its value was between (0.50–0.75) the coefficient would be considered good, high and with a strong correlation. Whereas if it was higher than that, it means a very strong correlation.

The previous Table 3 shows that all questionnaire questions statements have positive correlation, ranging between moderate to high, but not reaching

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

143

the level of very high. This indicates that all the statements are valid in what they measure, represent the part to which they belong and realise the internal validity element of the questionnaire.

Table 3

Pearson correlation coefficient for each statement
of the second part of the questionnaire

№	Statement	Pearson correlation coefficient
1	Extent of the student use of databases provided by the university	**0.433
2	Database cover of study curricula	**0.751
3	Means for the student to acquire the skills to use databases	**0.533
4	Extent of student participation in the selection of databases	**0.319
5	University endeavor to motivate the students to use databases	**0.382
6	Use of specialised databases in fields different from that of the specialisation	**0.493
7	Effect of using databases on academic achievement	**0.571
8	Database language conformity with the study curricula	**0.483
9	Databases meeting the achievement of study and research homework	**0.581
10	Extent of satisfaction with the databases meeting the needs of study specialisation	**0.614

Tool Reliability

The researcher measured the reliability of the study tool (questionnaire) using Cronbach's Alpha (a) to ensure the reliability of the study tool. Table 4 shows the reliability coefficient of the study tool:

Table 4

The reliability coefficient of the study tool

Axis	Reliability coefficient
Axis for the objectives and fields of using databases	**0.613
Axis for the level and amount of use of databases	**0.577
Axis for the effect of using databases on increasing academic achievement	**0.512
Axis for the students satisfaction with the databases	**0.633

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

144

The above Table 4 shows that the values of the reliability coefficient of the questionnaire parts are relatively high, indicating that the study tool (questionnaire) has a good degree of reliability and can be relied upon in the field application of the study.

Statistical Processing

Table 5

The Chi Square test to calculate the moral differences between the answers and the impact factor of the variable on the answer

Axis	Yes, Number of students/ %	To some extent, Number of students/ %	No, Number of students/ %	X^2 test on the gender element Gender – Variations, %	X^2 test on specialisation element
1	2	3	4	5	6
Extent of the student use of databases provided by the university	98/ .23%	155/ 36.5%	172/ 40.5%	P Value = 0.022 Significant	P Value = 0.053 Insignificant
Database cover of study curricula	87/ 20.5%	202/ 47.5%	136/ 32%	P Value = 0.041 Significant	P Value = 0.039 Significant
Student acquisition of the skills for using the databases through courses organised by the university	33/ 7.8%	68/ 16%	324/ 76.2%	P Value = 0.065 Insignificant	P Value = 0.047 Significant
Extent of student participation in the selection of databases	22/ 5.2%	41/ 9.7%	362/ 85.1%	P Value = 0.039 Significant	P Value = 0.055 Insignificant
University endeavor to motivate the students to use databases	41/ 9.7%	87/ 20.4%	297/ 69.9%	P Value = 0.079 Insignificant	P Value = 0.059 Insignificant
Use of specialised databases in fields different from that of the specialisation	79/ 18.6%	161/ 37.9%	185/ 43.5%	P Value = 0.032 Significant	P Value = 0.033 Significant
Effect of using databases on academic achievement	81/ 19.1%	177/ 41.6%	167/ 39.3%	P Value = 0.066 Insignificant	P Value = 0.036 Significant

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

145

1	2	3	4	5	6
Database language conformity with the study curricula	39/ 9.2%	112/ 26.4%	274/ 64.4%	P Value = 0.031 Significant	P Value = 0.056 Insignificant
Databases meeting the achievement of study and research homework	38/ 8.9%	164/ 38.6%	223/ 52.5%	P Value = 0.049 Significant	P Value = 0.036 Significant
Extent of satisfaction with the databases meeting the needs of study specialisation	43/ 10.1%	93/ 21.9%	289/ 68%	P Value = 0.029 Significant	P Value = 0.022 Significant

The study sought to measure all students' opinions from all scientific disciplines on each question separately without allocating individual answers for each discipline until the researcher gets specific directions for the students' sample.

Conclusion

Through the results, the author of present study finds that there is a clear direction among the Northern Border University students that is relatively high, towards using the databases provided by the University through the Saudi Digital Library Platform. A high sector of the students also finds, in a limited way, that the available data covers the academic fields needed by the student, which cover the study curricula. However, in another way, the results show very negative responses regarding the student's acquisition of skills for using the databases from the courses organised by the University. The results also show a general negative attitude towards the student participation in the selection of the databases appropriate for the study curricula that meet their academic inclinations. The results also show that the Northern Border University does not endeavor enough to motivate the students to use the databases, while the opinions of student's lean, higher than average, towards using the databases specialised in fields different from their main specialisation field, with a slightly higher than average percentage find that the use of databases has affected their academic achievement. Yet, while a high percentage of students find that the language through which the contents of the databases is provided inappropriate, a low percentage of students find that the databases seek to fulfill the achievement of the study and research assignments asked of them. The previous result is supported by that the extent of satisfaction with the databases achieving the needs of academic specialisation are considered weak in the university students study sample.

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

146

Study Recommendations

Through the submitted study and the analysis of the student study community opinions, the researcher can conclude the following recommendations:

1. The results show that there is a clear deficiency towards the use of databases through students of human colleges about them in scientific colleges, which leads the researcher to recommend to the university to remedy this shortcoming and work to train students in human colleges to use databases and provide them with technological and research skills qualified to increase their capabilities for heavy use for the databases provided by the university.

2. The university should set as one of its priorities to work on establishing a specialised workshop to inform of the importance of databases, inform on their types, fields and research outputs of each.

3. Work towards linking the study curricula at the university with the fields of the available databases, and motivate the members of the faculty to complete study assignments through the use of the available databases to new databases linked to the study curricula.

4. The university should be keen to review and asses the available databases, to guarantee membership renewal, cancellation or application

5. The need to increase awareness through the transfer and establishment of mobile technology to enable access to the databases through the university.

6. The need to use the global and local experiences that seek to link the study curricula with the databases.

7. The need for the university to endeavor to reward the individual students who are careful to link their academic achievement through the use of databases.

8. The need for intensifying ongoing training on the use of databases, and the spread of the culture of academic knowledge between the students and the faculty members.

9. The university shall commit to direct students and faculty members to prepare and exchange the academic homework, assignments and scientific research through the use of databases.

10. The need to prepare regular periodic studies to measure the effect of using databases on increasing academic achievement at university provided for specific specialised sectors.

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

147

References

1. Wang S., Wang H. Teaching tip: a teaching module of database-centric online analytical process for MBA business analytics programs. *Journal of Information Systems Education.* 2019; 30 (1): 19–26.

2. Soria K., Fransen J., Nackerud S. Beyond books: The extended academic benefits of library use for first-year college students. *College & Research Libraries.* 2017; 78 (1): 8–22.

3. Sebastian J., Moon J., Cunningham M. The relationship of school-based parental involvement with student achievement: A comparison of principal and parent survey reports from PISA 2012. *Educational Studies.* 2017; 43 (2): 123–146.

4. Mason R. A. Database practicum for teaching database administration and software development at Regis University. *Journal of Information Technology Education: Innovations in Practice.* 2013; 12: 159–168.

5. Saudi digital library [Internet]. 2019 [cited 2019 Dec 10]. Available from: https://portal.sdl.edu.sa/english/

6. Shamandi S. Patterns of benefiting faculty members and their assistants from information systems and technology development projects (ICTP) at Sohag University [dissertation]. Sohag University, Faculty of Arts, Department of Libraries, Documents and Information Technology; 2014.

7. Wheeler J. Extraction of a relational database diagram from the database [dissertation]. University of North Florida; 2017.

8. Hussain I., Suleman Q. Effects of Information and Communication Technology (ICT) on students' academic achievement and retention in Chemistry at secondary level. *Journal of Education and Educational Development.* 2017; 4.

9. Hsiung C., Zheng X. MTF database: A repository of students' academic performance measurements for the development of techniques for evaluating team functioning. *British Journal of Educational Technology.* 2015; 46 (5): 942–946.

10. Rollo S. The effects of classroom-based dynamic seating interventions on academic outcomes in youth: A systematic review. *Learning Environments Research.* 2019; 22 (2): 153–171.

11. Sakibayev S., Sakibayev R., Sakibayeva B. The educational impact of using mobile technology in a database course in college. *Interactive Technology and Smart Education.* 2019; 16 (4): 363–380.

12. Kanadli S. A meta-analysis on the effect of instructional designs based on the learning styles models on academic achievement, attitude and retention. *Educational Sciences: Theory and Practice.* 2016; 16 (6): 2057–2086.

13. Martínez A. Data-mining techniques in detecting factors linked to academic achievement. *School Effectiveness and School Improvement.* 2017; 28 (1): 39–55.

14. Simsek Ö., Sarsar F. Investigation of the self-efficacy of the teachers in technological pedagogical content knowledge and their use of information and communication technologies. *World Journal of Education.* 2019; 9 (1): 196–208.

15. Sebastian J., Moon J., Cunningham M. The relationship of school-based parental involvement with student achievement: a comparison of principal and parent survey reports from PISA 2012. *Educational Studies.* 2017; 43 (2): 123–146.

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

148

16. Du Toit J., Verhoef A. Embodied digital technology and transformation in higher education. *Transformation in Higher Education.* 2018; 3, Article 52.

17. Gezgin D. The effect of mobile learning approach on university students' academic success for database management systems course. *International Journal of Distance Education Technologies.* 2019; 17 (1), Article 2: 15–30.

18. Trucano M. Innovative educational technology programs in low- and middle-income countries. *Childhood Education.* 2017; 93 (5): 364–367.

19. Baguant N. Integration of information and communication technologies in teaching by female academic teaching staff in the higher education sector in Mauritius. *International Journal of Higher Education.* 2019; 8 (5): 56–70.

20. Shelton C. An ecological model for university faculty members' thinking about technology. *Journal of Computing in Higher Education.* 2018; 30 (2): 279–297.

21. Caskey M. Supplemental nutrition assistance program education evaluation and database system. *Journal of Extension.* 2019; 57 (4), Article 4TOT6.

22. Chavez-Gibson S. The Comprehensive, Powerful, Academic Database (CPAD): An evaluative study of a predictive tool designed for elementary school personnel in identifying at-risk students through progress, curriculum, and performance monitoring [dissertation]. The University of Texas at El Paso; 2013.

23. Lloyd-Strovas J., Arsuffi T. Environmental education organizations and programs in Texas: Identifying patterns through a database and survey approach for establishing frameworks for assessment and progress. *World Journal of Education.* 2016; 6 (6): 1–17.

24. Di Felice P. Teaching geographical databases at the engineering master level: Learner-centred approach vs teacher-centred approach. *European Journal of Engineering Education.* 2018; 43 (5): 757–770.

Information about the author:

Feras M. Al-Madani – Associate Professor of Education, Faculty of Education and Arts, Vice President of Academic Affairs, Northern Border University; ORCID ID: https://orcid.org/0000–0003–1739–5363; Arar, Saudi Arabia. E-mail: fmabm@yahoo.com; fmabm@hotmail.com

Информация об авторе:

Ферас М. Аль-Мадани – доцент факультета образования и искусств, проректор по академическим вопросам Северного пограничного университета; ORCID ID: https://orcid.org/0000–0003–1739–5363; Арар, Саудовская Аравия. E-mail: fmabm@yahoo.com; fmabm@hotmail.com

Образование и наука. Том 22, № 5. 2020/The Education and Science Journal. Vol. 22, № 5. 2020

149