Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS)
Website: http://bcsdjournals.com/index.php/mejrhss
ISSN 2709-0140 (Print) and ISSN 2709-152X (Online)
Vol.2, Issue 1, 2021
DOI: https://doi.org/10.47631/mejress.v2i1.195

Students' Engagement for Better Learning at a Lebanese Francophone University: A Case Study

Lina Kadi[1], Dalal Moukarzel[2], Salim Daccache[3]

[1] *Saint Joseph University of Beirut, Lebanon.*
[2] *Associate professor and Dean of the Faculty of Information and Communication at the Antonine University, Lebanon.*
[3] *Professor and Rector of Saint-Joseph University of Beirut, Lebanon.*

Article Info

Article history:
Received: 02 December 2020
Revised: 31 January 2021
Accepted:03 February 2021

Keywords:
Student-Faculty Interaction, Effective Teaching Practices, Supportive Environment, NSSE Perceived Learning Gains, Engagement.

Paper Type :

Research Article

Corresponding Author:

Lina Kadi

Email:
lina.kadi@net.usj.edu.lb

Abstract

Purpose*: The purpose of this study was to investigate the influence of student-faculty interaction, supportive environment, and effective teaching practices on students' perceived learning gains at the Faculty of Science in a francophone university in Lebanon.*

Approach/Methodology/Design*: This study used a mixed research method design, including semi-structured interviews with five administrators, and a student engagement survey based on the National Survey of Student Engagement (NSSE). The sample consisted of one Dean, four Chairpersons, and two-hundred eighty-six undergraduate students. We conducted thematic analysis for the qualitative data obtained from interviews, and Spearman's rank correlation analysis on the quantitative data obtained from the survey.*

Findings: *The interview results with the dean and chairpersons revealed that having clear communication with students about their learning outcomes, offering a supportive environment and a structured advisory system were important elements to engage them in their learning experience. Findings from the students' survey showed that clearly explaining course objectives and giving feedback on tests or homework are essential teaching practices that enhance students' learning gains. Responses also showed the significant influence of a supportive environment measures on students' academic and personal development, in particular, encouraging social interaction and helping students handle their non-academic responsibilities.*

Practical Implications: *This study can be a reference for other Francophone universities that are not acquainted with the NSSE survey, widely used in Anglophone universities to promote student learning. It could contribute in reviewing the effectiveness of teaching practices, student-faculty interaction, or other academic and social support services.*

Originality/Value*: This research paves the way for further research that could include other disciplines in the selected university or include other Francophone universities in Lebanon with emphasis on interactive teaching practices that effectively engage students in the University's life.*

1. Introduction

The rapid growth and demand for high-quality education worldwide have urged many governments to reform their educational systems encouraging American and European

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

accreditation institutions to develop guidelines for quality assurance. The European Higher Education Area (EHEA) in Brussels (ENQA, 2015) defined quality as a product of the interaction between students, instructors, and the institutional learning environment. EHEA viewed the role of quality assurance as a means to ensure that the content of a program, the learning opportunities, and the services in a learning environment are fulfilling the purpose. Spady(1993) "argues that there is a significant difference between outcome-based education and simply defining outcomes for an existing curriculum, and he further explains that outcome-based education does not mean curriculum based with outcomes sprinkled on top, it is a transformational way of doing business in education" (p.2). The American and European systems called for a student-centered approach in teaching and learning, stressing out the importance of review at all levels, including program and course assessment asone of the main points in the teaching and learning process, with a key element which is known as learning outcomes that […] represent one of the essential building blocks for transparency within higher education systems and qualifications" (Daskalovska et al., 2012; Gudeva et al., 2012). According to Dicker et al., (2017), students consider their engagement in the teaching and learning process an essential indicator of quality education. These systems called also for the identification of competencies that are acquired outside the formal curricula.

The present study is thus situated within a framework of previous studies that all emphasize students' engagement. It is a case study, exploring the influence of student-faculty interaction in creating stimulating and learning conducive environment.

2. Literature Review

Several studies reflected the impact of student engagement on enhancing learning gains. Research found that effective teaching practices stimulate students' motivation and engage them in the learning process (Umbach & Wawrzynski, 2005; ENQA, 2015). These findings are in line with an earlier research study done by Chickering and Gamson (1987) on student engagement, in which they found that effective teaching practices such as giving prompt feedback and implementing active learning strategies as well as encouraging interaction between students and instructors are among the good practices that improve undergraduate education.

Engagement in learning is deeply rooted in the socio-constructivist theory, which assumes that individual and social participation affect learning by constructing the meaning of what is learned (Smagorinsky, 2013). Interaction between the personal characteristics, existing knowledge and external social situations helps in the learning process as ascertained by Hein (1991) and Alt (2015). However, it is worth noting that Greg Kearsley and Ben Shneiderman (1998) developed the Student Engagement Theory during their teaching of electronics within a distance education environment. Though their model for learning was intended for a technology-based environment, they believed that engagement occurs with and without the use of technology, highlighting the fact that students should be meaningfully engaged in educational activities with useful tasks and peer interaction.

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

Many studies on student engagement in the United States underlined these facts, mainly based on two large-scale quantitative surveys, the National Survey of Student Engagement (NSSE) and the College Student Experience Questionnaire (CSEQ). Both questionnaires were supported by Indiana University Center for Postsecondary Research and were introduced to hundreds of educational institutions throughout the US and beyond its borders (Pace & Kuh, 1998; Kuh, 2001; Hakes, 2010). While the CSEQ measures student engagement through three aspects which are College Activities, College Environment and Estimate of Gains (Middaugh, 2011; CSEQ, 2007), the NSSE measures student engagement through four themes, but with a fewer number of items than the CSEQ survey. These themes are academic challenges, learning with peers, experiences with faculty and campus environment (NSSE, 2020).

Understanding the relationship between students and instructors is one way to address student engagement. In 2004, Lundberg and Schreiner studied how faculty interaction predicts students' gains in learning. The researchers drew their sample from two big databases that represented most racial/ethnic groups in America to get a total sample of 4,501 students. The results showed that the quality of interaction was the only variable that significantly predicted learning, while others such as age, gender, student working hours on campus, frequency of experiences with faculty, student financial support, and advanced degree plans did not.

In 2005, Umbach and Wawrzynski worked on data from two national data sets to understand the influence of faculty and institutional characteristics on students learning. About twenty thousand senior students from one hundred thirty-seven schools completed the NSSE survey, and about fourteen thousand instructors from the same colleges completed another parallel survey, the Faculty Survey of Student Engagement (FSSE).Results showed high gains in students' general knowledge (i.e., writing and speaking), social and personal development, and real-world capabilities in colleges where instructors and students frequently discussed course ideas outside the classroom. These results highlight the importance of informal interaction between students and their instructors to improve students' outcomes.

Effective teaching practices are another aspect of student engagement that proved its beneficial influence on student learning. In this regard, BrckaLorenz et al. (2012) collected data from more than eleven thousand students, representing about 59% of the population of senior students in 600 participating academic institutions. They all completed the National Survey of Student Engagement (NSSE). The results of this study showed that 80% of senior students majoring in engineering, physical sciences, and biological sciences were interested in classes whose instructors used effective teaching practices. Such practices included using diagrams or examples to clarify difficult concepts, giving instant and clear feedback on tests or homework, clarifying course-material goals, and teaching in an organized way.

These results were ascertained in a study done by Shim and Walczak (2012) using data from the Wabash National Study, also based on NSSE and CAAP. They investigated the effect of teaching practices on students' critical thinking skills, surveying students at the beginning and end of their first year in Liberal Arts. The findings from 3081 students' responses

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

(68.5%) showed that instructors' challenging questions positively affected students' critical thinking skills. Moreover, results showed that they considered well-organized presentations as an important factor for better understanding and material analysis.

Other teaching practices require collaboration between students or between students and their instructors. In Mount Royal University, Canada, Vaughan (2014) explored how instructors implemented collaborative learning techniques and assessment activities to encourage student engagement in the course and increase students' outcomes. He collected data from 273 students and 8 instructors who attended seven blended courses. His findings, based on online surveys, showed a significant moderate correlation between final grades and engagement in effective educational practices, such as collaborative group projects and the use of technology ($r=0.303$, $p< 0.001$). The researcher recommended working on these results to improve students' participation in collaborative learning and to be able to self-regulate their learning, as well as discuss their concerns with instructors and peers.From a similar perspective, and in an attempt to find the factors that influence students' success in a National English test, Anub (2020) surveyed secondary teachers from top five schools in Buenavista, Philippines. The researcher found that introducing various teaching techniques along with diverse supporting material provided by the institution were among the factors that influence students' achievement. Anubreferred in her study to Kumar's (2009) observations about the importance of being an experienced teacher in implementing innovative teaching strategies that engage students in the learning process, and on Abucay's (2009) recommendations for institutions to invest in various supportive instructional material that improve learning.

On the other hand, other engagement factors require the support of academic institutions. In Malaysia, Othman et al. (2013) studied how higher academic issues (such as degree completion and career plans) could influence students' psychological, emotional or educational behaviours in life. Based on a conceptual analysis, they found that the ability of students to succeed in achieving their university goals is affected by campus facilities and a supportive administration. For instance, encouraging social relationships with students from different backgrounds, mentoring, providing occasions for attending events and other academic support services were among the factors that help the student attain academic success.

In Lebanon, some of the well-known Anglophone universities had already examined student's engagement using the NSSE framework, and they took actions for improvement. However, little research on student engagement in Francophone universities had been done in the country, especially using an international survey to investigate how administration, instructors, and students perceived student engagement. The purpose of our study is exploratory, based on the National Survey for Student Engagement (NSSE) conceptual framework, which measures student engagement through a set of indicators that emerged from theories of quality, involvement, social and academic integration, in addition to effective practices in undergraduate education, which is in line with Pascarella et al., (2010) and NSSE(2013). Some Anglo-Saxon universities in Lebanon and the Arab region used the NSSE to evaluate student engagement (Nauffal, 2016), which makes it an important

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

instrument for our study as it covers the engagement aspects we are researching. We considered the engagement items, based on a set of 10 indicators, under the "student-faculty interaction, effective teaching practices, and supportive environment" benchmarks as predictors, and the NSSE "perceived learning" gains as outcomes.

The selected Lebanese university for this research opened its doors in 1875. It is one of the largest Francophone universities with several campuses in Lebanon, a small country of 10452 Km^2 in the Middle East region. The chosen context was the Faculty of Science (FS) which includes four departments: Mathematics, Physics, Chemistry, and Life Sciences. The main language of instruction is French, but some degrees are currently offered in English, which requires students to sit for an English proficiency test provided by a university in the United States of America. Noteworthy, the studied university was in the process of accreditation from a European accreditation body at the time of this study. Therefore, they initiated a reviewing process of their educational approach to link it more to their mission that looks at educating the student as a whole person through coaching, encouragement and learning, which is designated as the *curapersonalis* (Woodson,2010).

Research Questions:

Based on the above, we focused on the following questions:

1. In what ways academic administrators, dean and chairpersons, were providing a supportive environment for students' engagement?
2. How did students perceive the student-faculty interaction (SF), effective teaching practices (ET) and supportive environment (SE)?
3. What is the correlation between the engagement benchmarks (student-faculty interaction-SF, effective teaching practices-ET, and supportive environment-SE) and the NSSE perceived learning gains (Pg) at the studied Faculty?

To answer this latter question, we had three hypotheses:

- H1: Student-faculty interaction is moderately correlated with students perceived leaning gains
- H2: Effective teaching practices are strongly correlated with students perceived leaning gains.
- H3: The supportive environment is strongly correlated with students perceived leaning gains.

3. Methodology and Procedures

Research Design

A mixed research approach, *Qual-Quan*, was adopted to explore the students, dean, and chairpersons' perceptions about students' engagement, and examine students' learning experience at the university.

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

Population and Study Sample

The Francophone university was purposefully selected for being one of the oldest and biggest university in Lebanon. The research focus was on one of the five campuses that included the Faculty of Sciences. The chosen sample consisted of three groups: the dean of the FS, four Chairpersons, and 286 undergraduate students, who represented the 2nd and 3rd year students at the Faculty.

Instruments

Two instruments were used: (1) semi-structured interviews, and (2) the National Survey of Student Engagement (NSSE, version 2017). All participants read and understood an informed consent, which ensured the confidentiality of responses and the possibility to withdraw at any time. The semi-structured interviews were conducted in the natural setting of the dean and chairpersons, which was their office. The instrument had two broad questions: (1) To what extent do you think the student-faculty interaction is effective in engaging students in the learning process; and (2) how do you see instructors providing a supportive learning environment to their students? Prompted questions emerged throughout the interviews based on responses and the information participants wanted to convey, which allowed us to explore the relationship between students and faculties from the administrators' point of view.

The NSSE survey was adapted to the Lebanese context, with permission from the National Survey of Student Engagement, under the Trustees of Indiana University Copyright 2001-18, and the consent of the University Centre of Ethics prior to beginning the study. It was then piloted in the English and French versions. The survey had 27 items related to three engagement indicators (student-faculty interaction-SF, supportive environment-SE, and effective teaching practices-ET), and the student learning outcome (perceived learning gains-Pg). Two different scales were adopted in the survey: (1) a five-point Likert scale with the SE and Pg indicators: "very much, quite a bit, some, very little and never", and (2) a four Likert point scales with the SF and ET indicators: "Very often, Often, Sometimes, Never". The instrument reliability was tested for the Cronbach's alpha test (α) based on Gliem JA and Gliem RR (2003).The results showed an internal consistency greater than 0.8 on all indicators except for the student-faculty interaction indicator, which was moderately reliable with an α value of 0.64.

Each engagement indicator had several items. The student-faculty interaction indicator included 4 items of communication between students and instructors: career discussion, activities with instructors other than coursework, course-related out-of-class conversation, and academic performance discussion. The effective-teaching practices indicator had five items; these were meant to give clear explanation of course goals, teaching well-organized sessions, using illustrations to explain difficult ideas, providing feedback on drafts, and giving instant feedback on tests or assignments. The supportive environment indicator represented the measures taken by the academic institution to promote student engagement,

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

as well as academic and non-academic success. These measures included8 items: academic support from the institution, encouraging students to use learning support services, encouraging contactwithdiversestudents,providingsocialopportunitiesforstudents,providing wellness support, assisting students in managing non-academic commitments, encouraging students to participate in campus activities, and encouraging students to attend events(social, economic, and political).The learning outcomes indicator represented the skills and abilities that were supposed to be affected by student engagement. These included 10 items: writing clearly and effectively, speaking clearly and effectively, thinking clearly and effectively, analyzing numerical data, acquiring job-related skills, collaborating with others, developing ethical values, accepting diversity, solving real-world problems, and becoming uninformed citizen.

Data Collection and Analysis

Data was collected over a period of2 months. Four out of the five administrators accepted to audio-record the interview. Participants' identity was protected; for example, Chairperson 1 was identified as C1. Audio and written notes were transcribed and coded for analysis. The qualitative results helped us in answering the first research question related to the role of administrators in providing a supportive learning environment that promotes student engagement in learning.

The survey was administered electronically to all undergraduate students who completed two consecutive semesters at the Faculty. However, due to a low response rate, hard copies were then distributed to students in class. In order to avoid duplicated responses, we asked students not to complete the survey if they have already done it online, and students abided by the rule.87 students out of 286completed the survey, which represented 30% of the total sample population. The quantitative data collected helped us answer the second and third research questions.

We used Spearman's rank correlation (rho, designated by ρ) to find out whether a relationship existed between the items of the three engagement indicators and student learning gains. The strength of correlation was set as per Frey's (2018) recommendations. Meaning that for a (ρ) value between 0.2and 0.29, the correlation is weak; for values between 0.3 and 0.49, the correlation is moderate; and for values between 0.5 and 0.69,the correlation is strong. Statistically significant results at p-value =0.001 or0.05 indicated in the same tables that there was a correlation between the studied items.

4. Results and Discussion

To answer the research questions, the interviews with administrators were first interconnected; then, the results of students' answers to the NSSE survey were presented, and finally, the Spearman correlation helped us testing our hypotheses.

Results Related to the First Research Question

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

Analysis of administrators' interviews helped in answering the first research question: "In what ways the dean and chairpersons were providing a supportive environment for students' engagement?" Four themes emerged from the data collected during interviews: student advisory, student supporting material, student-instructor communication, and educational practices. We selected specific interview quotes under each theme.

Student advisory. Based on a question regarding student engagement and the supportive environment, all interviewees raised the point of student advisory either through tutoring or through the open door strategy. The dean and chairpersons said that some of the instructors act as advisors; they are referred to as "tutors". The dean ascertained that "three years ago, the University started implementing the policy of having a tutor for each student", and many instructors "follow-up on [students'] concerns". The chairpersons also stressed out on open-door policy that all instructors adopt it as a new and important strategy to support students at the FS. For example, C1explained that: "all instructors including himself are available in the offices. Students can drop by anytime or take an appointment to ask about anything they did not understand in class."C3 ascertained that: "when a student comes, I give him/her the priority and stop doing anything else." C2 and C4 were on the same line of thought as C1 and C3. Thus, according to administrators, the availability of tutors and instructors to address students' needs and queries was considered an important supportive environment measure that engages students in the learning process.

Providing supporting material. The dean and chairpersons affirmed that they provide supporting material to students, like books, handouts, website links, references, and other means of learning. Chairpersons stressed out the meaningful use of technology to keep students learning, especially with the upload of most of the course material on the Moodle platform. C1 explained that all instructors "put all the courses on Moodle, even supplementary documents or projects."C2 explained that instructors also provide handouts of the presentations in class and not only on Moodle, saying "we give the students supportive materials (…). The student does not worry anymore from where to get the lecture or class notes."C1 and C2 statements were confirmed during the interviews with C4and C3 who added: "we also give students website links as resources to read to involve them in our lecture."

Student-instructor communication. As an important indicator for student engagement, the dean, and chairpersons described the student-instructor interaction as an essential element that facilitates learning. Most of them focused on the use of office hours. While C1 insisted on being present for students only during office hours, C2, C3 and C4 explained that they welcome students any time they can drop by. This is best summarized in what C3 said: "We, as instructors do not have our privacy; although there are office hours for students, but in the end, the students come when they can, depending on their time." Another direct communication apart from the face-to-face is through emails. C4 insisted that instructors "don't have a problem opening the door any time students like to see us; they can also send emails." On the other hand, the dean talked about the presence of the students' delegates to enhance communication between students, administration, and instructors saying that: "the

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

university gives an important role to these delegates, which is to relay important information to their peers." Through these statements, one can see three ways of communication adopted at the FS: face-to-face, emails, and students' delegates.

*Educational practices***.** The dean and chairpersons said that having students participate in field trips, work in teams, and on projects is among their essential educational practices. C4 explained, "we base 90% of our course materials on problem-solving". He further clarified that, after teaching a given theory, instructors "ask students to do several exercises, work on case studies, and give them resources." In the same line of thought, C2explained that students "go on field trips to hospitals, industries, and companies to explore the application of what was discussed in class."

Based on these explanations, the administrators showed the FS engagement in quality education through a variety of educational practices that involved students in solving real-life problems and gaining job-related skills. The teaching strategies used seemed to motivate and engage students in the teaching and learning process. However, administrators expressed one concern which is the sustainability of the applied strategies over time stressing the importance of the follow-up with faculties and students.

Results Related to the Second Research Question

A statistical analysis was performed using the SPSS Statistics software (version 23) to answer the second research question: "How do students' perceive student-faculty interaction (SF), effective teaching practices (ET) and supportive environment (SE)?". We considered responses to "often and "very often", as well as "very much" and "quite a bit" as being affirmative answers to the questions asked.

As shown in Figure 1, responses to the student-faculty Interaction indicator varied between 16% and 36 %, which showed a low engagement in various discussions with instructors**.** The lowest percentage frequency (16%) was on activities done with instructors other than course work, followed by 19% who reported that they discuss their academic performance with their instructors. While only 26% of students said that they discuss course-related ideas outside the classroom, 36% reported that they discuss career issues with their instructors.

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

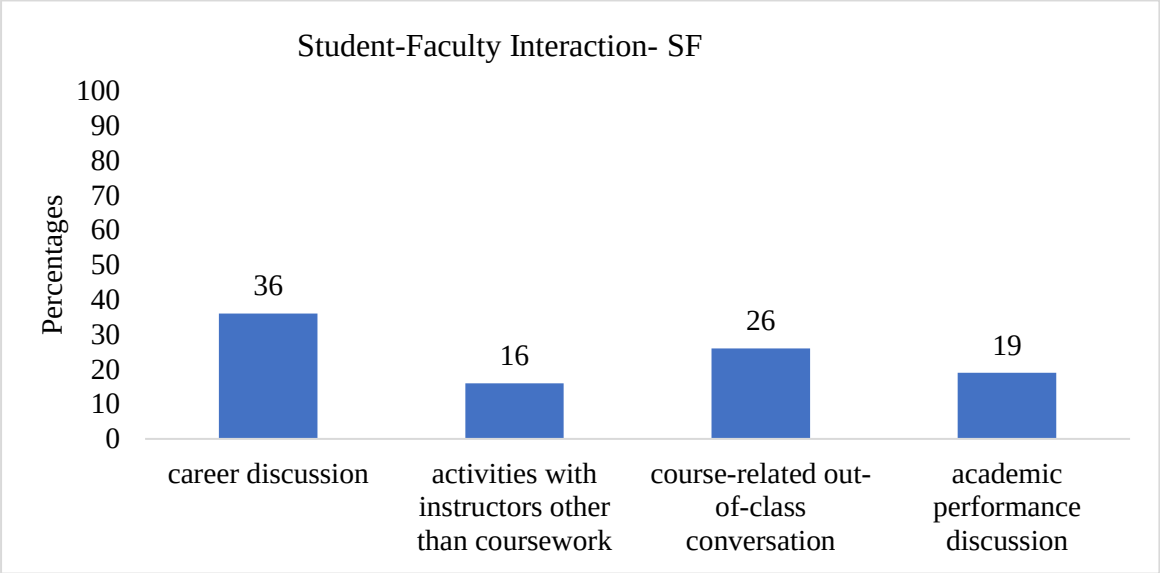


Figure1. *Percentage of students' affirmative responses on Student-Faculty interaction (SF).*

Concerning the teaching methods, students' responses showed different opinions. As observed in Figure 2, affirmative responses varied between 74% and 29%. The highest percentage was related to instructors explaining course goals, followed by 71% who considered that instructors teach in an organized way and 69% that they clarify complicated ideas using illustrations. The lowest percentages were on providing instant feedback on tests (39%) and giving feedback on drafts (29%).

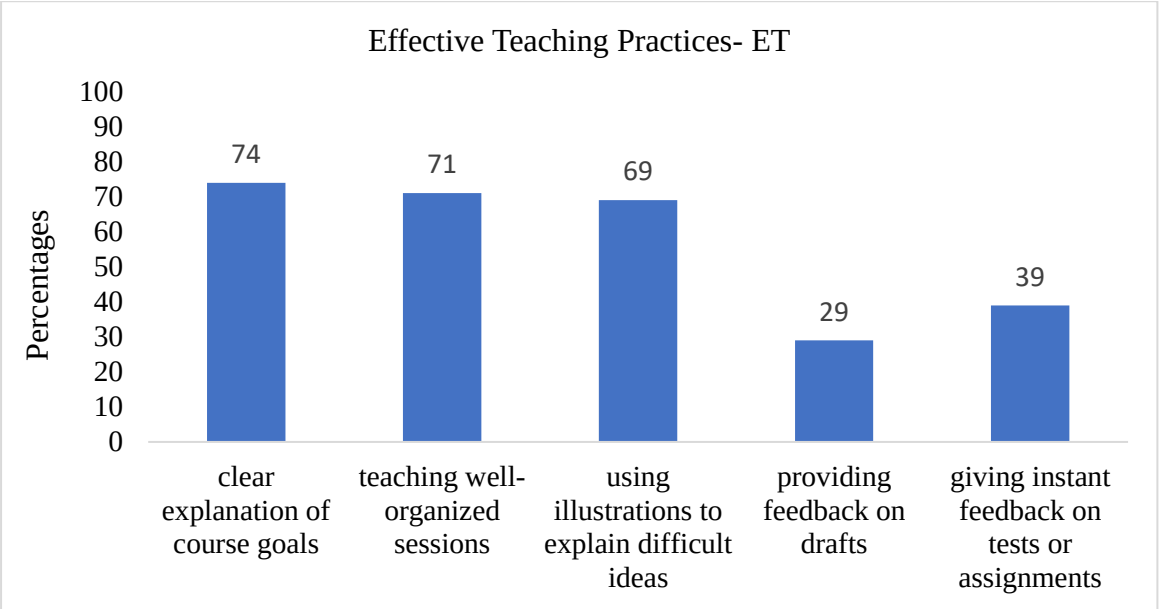


Figure 2. *Percentage of students' affirmative responses on Effective Teaching practices (ET).*

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

For the supportive environment measures, students considered the academic support provided by the institution as a prominent one. As shown in figure 3, students' affirmative responses varied between 72%and 39%. The highest percentage (72%) was related to the academic support provided by the university, followed by 52% who considered that the institution supports their overall well-being and 50% that they are encouraged to be in contact with students from diverse backgrounds. While 48% of students affirmed that their institution creates occasions to get involved socially, 44% noted that the FS encourages them to attend activities on campus. In similar values, 42%reported that they were encouraged to attend events (social, economic, and political), and 40% noted that the university helped them cope with non-academic commitment, whereas, contradicting the responses of 72 %, only 39% considered that the institution encouraged them to use the learning support services provided.

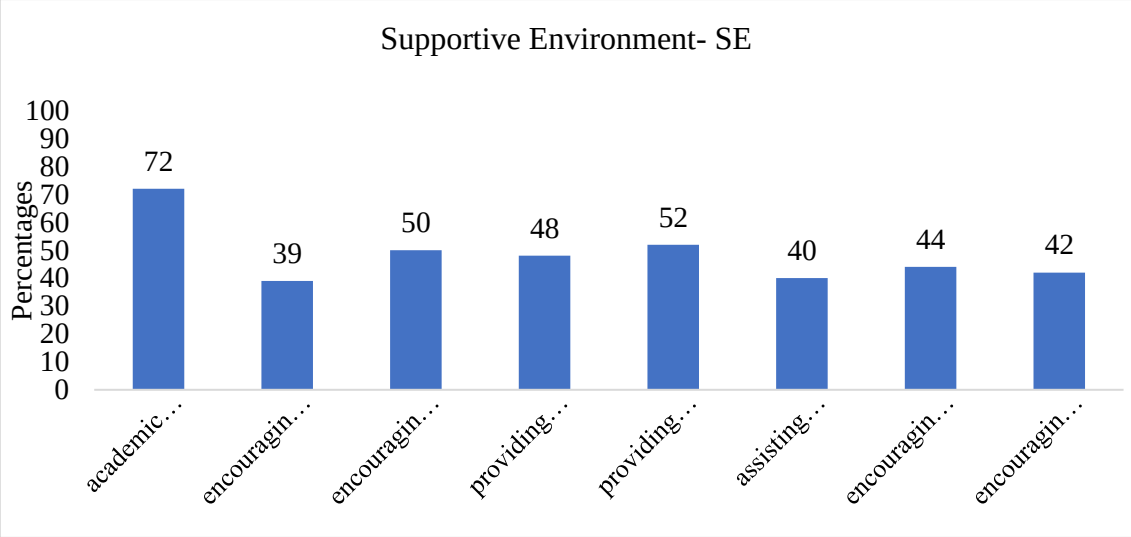


Figure3. *Percentage of students' affirmative responses the Supportive Environment (SE).*

To better understand the impact of the engagement measures, we also looked into the frequency of students perceived learning gains. Students' affirmative responses varied between 86% as highest and 65% as lowest percentage, which indicates a better perception of learning. Figure 4, shows that students perceived, to a large extent, that they gained a lot of academic and personal development skills from their institution.65% of students noted that they acquired skills to solve real-world problems, followed by 66% who said that they believe they were becoming more informed citizens accepting people of other backgrounds. While these were the lowest percentages, 67% of students affirmed having gained job-related skills, and 68% noted that they became capable of developing ethical values. Percentages of affirmative responses kept growing with 77% of students who believed they acquired skills to collaborate with other people, and 78% who thought they became capable of analyzing numerical data. The highest percentages were on the improvement in writing (81%), speaking (85%), and effective thinking (86%).

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

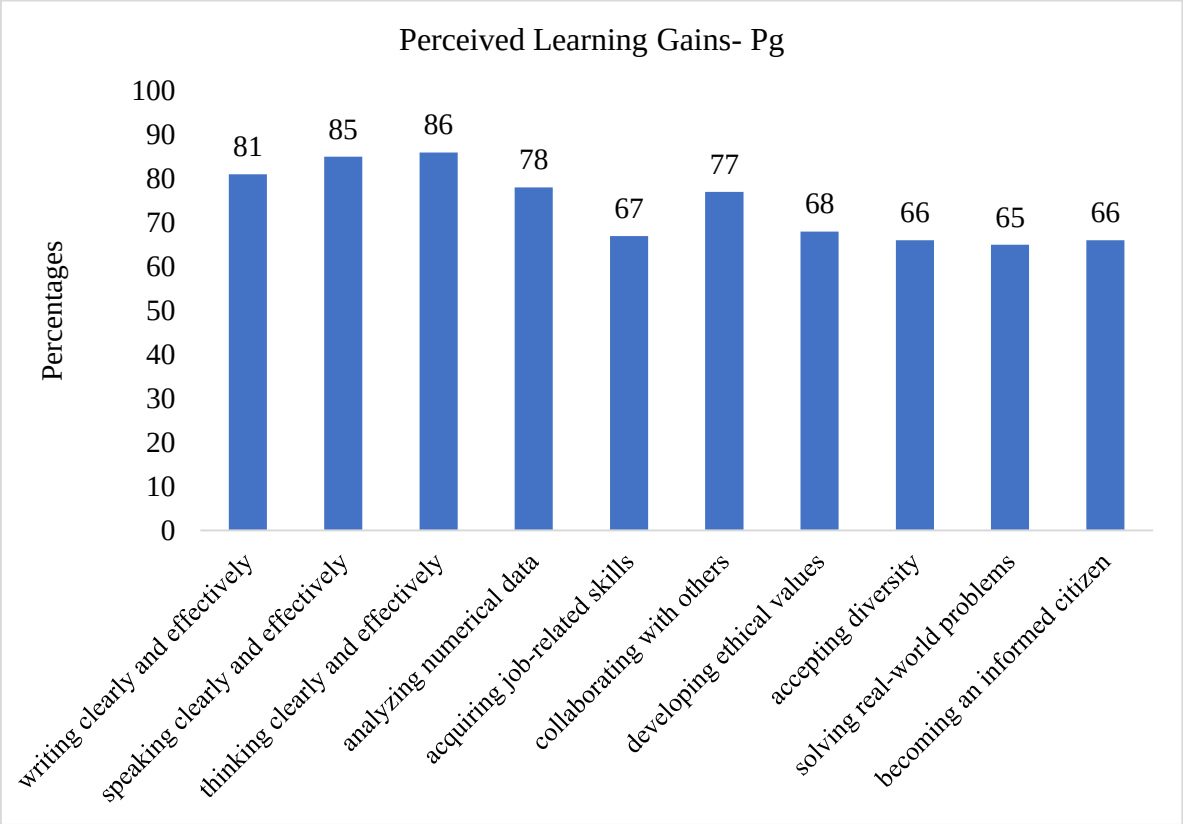


Figure 4. *Percentage of students' affirmative responses on the Perceived Learning gains (Pg).*

Based on the results of the second research question, it can be concluded that students were mostly satisfied with the course goals explanations, organized teaching sessions, and illustrations as provided by their instructors. However, they were not satisfied with their interaction with instructors, and the institutional support, except in what concerned the academic assistance. This is interesting to note since, on the counterpart, the majority of students expressed their satisfaction for the learning they gained at the institution.

Results Related to the Third Research Question

To answer the third research question: "What is the correlation between the engagement benchmarks (student-faculty interaction-SF, effective teaching practices-ET, and supportive environment-SE) and the NSSE perceived learning gains (pg)?", the Spearman correlation model was used, which allowed us to verify our hypotheses by indicating the direction and strength of the link between the engagement benchmarks, and the NSSE perceived learning gains (Tables 1, 2, and 3).

Comparison of the student-faculty interaction (SF) and students' perceived learning gains (Pg).

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

We hypothesized that student-faculty interaction moderately influenced student learning gains. Our correlation analysis was done on four categories: career discussion, activities with instructors other than coursework, course-related out-of-class conversation, and academic performance discussion (Table 1).

The analysis showed moderate correlation between 2 categories of student-faculty interaction and 3 perceived learning gains: (1) activities with instructors other than coursework and (a) accepting diversity (ρ =0.32) and (b) solving real-world problems (ρ =0.3), and (2) academic performance discussion and speaking clearly and effectively (ρ =0.31). On the other hand, while a weak correlation was found between 3 out of the four categories and some of the perceived learning gains, no correlation at all could be found between career discussion and any of the learning gains with a ρ value varying between -0.02 and 0.016.

Table 1. Spearman correlation between Student-Faculty interaction (SF) items and NSSE perceived learning gains (Pg).

Pg / **SF**	Career Discussion	Activities With Instructors Other Than Coursework	Course-Related Outside Classroom Conversation	Academic Performance Discussion
writing clearly and effectively	0.16	0.28**	0.22*	0.25*
speaking clearly and effectively	0.04	0.25**	0.18	0.31**
thinking clearly and effectively	-0.02	0.28**	0.25*	0.1
analyzing numerical data	-0.07	0.17	0.08	0.06
acquiring job-related skills	0.15	0.28**	0.17	0.21*
collaborating with others	0.15	0.3**	0.2	0.08
developing ethical values	0.12	0.3**	0.26*	0.12
accepting diversity	-0.03	0.32**	0.13	0.15
solving real-world problems	0.02	0.3**	0.18	0.17
becoming an informed citizen	0.01	0.27*	0.15	0.17

**Correlation is significant at the p=0.001 level (2-tailed), *Correlation is significant at the p= 0.05 level (2-tailed).
ρ =0.2 to 0.29 (weak correlation), ρ =0.3 to 0.49 (moderate correlation); ρ =0.5 to 0.69 (strong correlation) (Frey, 2018)

Based on the results stated above, the first hypothesis could not be fully validated since not all student-faculty interaction categories moderately influenced students' perceived learning gains.

Comparison of the Effective Teaching practices (ET) and Students' Learning Gains (Pg).

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

The Spearman test for the second hypothesis "effective teaching practices are strongly correlated with students' perceived leaning gains", showed only one strong correlation between "giving instant feedback on tests or assignments" and "speaking clearly and effectively" (ρ = 0.5) (Table 2).Otherwise, we observed a moderate correlation specifically on 2 out of the 5 categories of effective teaching practices, the most important one being "giving instant feedback on tests or assignments" followed by "explanation of course goals"; these categories were moderately correlated with most of the items of the students' perceived learning gains with a ρvarying between 0.34 and 0.45. The other 3 categories under effective teaching practices, which are "teaching session with organization, using illustrations to explain difficult ideas, providing feedback on drafts" were moderately to weakly correlated with students' perceived leaning gains. However, it would worth noting that4 out of the 5 categories of the effective teaching practices: "clear explanation of course goals, teaching session with organization, using illustrations to explain difficult ideas, and giving instant feedback on tests or assignments" were moderately correlated with one of the students' perceived leaning gains "thinking clearly and effectively "though at different levels of correlation (ρ varying between 0.34 and 0.44).

Table 2. Spearman correlation between Effective Teaching practices (ET) items and NSSE perceived learning gains (Pg).

ETPg	clear explanation of course goals	teaching session with organization	using illustrations to explain difficult ideas	providing feedback on drafts	giving instant feedback on tests or assignments
writing clearly and effectively	0.29	0.12	0.09	0.13	0.45**
speaking clearly and effectively	0.24*	0.05	0.18	0.14	0.5**
thinking clearly and effectively	0.44**	0.38**	0.36**	0.19	0.34**
analyzing numerical data	0.36**	0.27*	0.3**	0.11	0.35**
acquiring job-related skills	0.38**	0.27*	0.3**	0.2	0.35**
collaborating with others	0.37**	0.17	0.18	0.13	0.39**
developing ethical values	0.34**	0.11	0.27*	0.31**	0.35**
accepting diversity	0.21	0.15	0.12	0.15	0.28**
solving real-world problems	0.2	0.23*	0.21	0.17	0.36**
becoming an informed citizen	0.22*	0.11	0.1	0.23*	0.39**

**Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed).
ρ =0.2 to 0.29 (weak correlation), ρ =0.3 to 0.49 (moderate correlation); ρ =0.5 to 0.69 (strong correlation)

(Frey, 2018)

Based on these results, the second hypothesis could not be fully validated since we observed only one significant correlation with a ρ= 0.5.

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

Comparison of the Supportive Environment (SE) with students' perceived learning gains (Pg).

For the third hypothesis "The supportive environment is strongly correlated with students perceived leaning gains", the Spearman test (Table 3) showed interesting results. One category out of the eighth of the supportive environment benchmark, "assisting students in managing non-academic commitments", showed the highest attraction in students' perception since it was strongly correlated to 4 learning gains: "acquiring job-related skills" (ρ= 0.53), "developing ethical values" (ρ =0.54), "accepting diversity" (ρ =0.56), and the highest "becoming informed citizens" (ρ =0.57).Whereas 3 other categories were strongly correlated with 3 different learning gains: (a) The "academic support from the institution" was strongly correlated with "writing clearly and effectively" (ρ = 0.5), and(b) providing "social opportunities for students" as well as encouraging "students to participate in campus activities" were strongly correlated with the same learning gains "becoming an informed citizen" *(*ρ =0.53 and ρ =0.5 respectively). On the other hand, we observed a moderate correlation close to becoming strong (ρ = 0.46 to 0.49) for 6 items under 4 out of the 8 categories, mainly the following: "writing clearly and effectively" was correlated with "assisting students in managing non-academic commitments"(ρ = 0.46); "acquiring job-related skills" with "encourage students to use learning support service" (ρ = 0.46); "developing ethical values" with 2 categories "provide social opportunities for students " (ρ = 0.48) and "provide wellness support (ρ = 0.49) , "solving real-world problems" with "encourage students to use learning support services" (ρ = 0.47), and "becoming an informed citizen" with "encourage students to attend events"(ρ =0.47).

To conclude, the results for the third hypothesis showed a strong correlation between 8 items in the Students' Perceived Learning Gains with 4 categories in the Supportive Environment, the highest being related to "assisting students in managing non-academic commitments". Though our third hypothesis was not fully validated, we observed that the supportive environment at the FS positively influenced student-learning gains.

Table 3. Spearman correlation between Supportive Environment (SE) variables and NSSE perceived learning gains (Pg).

SEPg	academic support from the institution	encourage students to use learning support services	Encourage contact with diverse students	provide social opportunities for students	provide wellness support	assisting students in managing non-academic commitments	encourage students to participate in campus activities	encourage students to attend events
writing clearly and effectively	0.5**	0.4**	0.41**	0.42**	0.4**	0.46**	0.19	0.3**
speaking clearly and effectively	0.42**	0.29**	0.38**	0.35**	0.31**	0.39**	0.13	0.19
thinking clearly and effectively	0.4**	0.17	0.3**	0.26*	0.26*	0.23*	0.27*	0.21
analyzing numerical data	0.35**	0.32**	0.24*	0.31**	0.2	0.24*	0.33**	0.31**

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

acquiring job-related skills	0.41**	0.46**	0.36**	0.53**	0.37**	0.53**	0.43**	0.4**
collaborating with others	0.32**	0.27**	0.28**	0.35**	0.25*	0.37**	0.18	0.21*
developing ethical values	0.46**	0.39**	0.36**	0.48**	0.49**	0.54**	0.36**	0.35**
accepting diversity	0.26*	0.37**	0.42**	0.44**	0.4**	0.56**	0.41**	0.39**
solving real-world problems	0.29**	0.47**	0.37**	0.36**	0.33**	0.45**	0.37**	0.39**
becoming an informed citizen	0.42**	0.43**	0.42**	0.53**	0.49**	0.57**	0.5**	0.47**

**Correlation is significant at the p=0.001 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed). ρ =0.2 to 0.29 (weak correlation), ρ =0.3 to 0.49 (moderate correlation); ρ =0.5 to 0.69 (strong correlation) (Frey, 2018)

Focusing on quality education based on the European guidelines for high-quality teaching (ENQA, 2015), and using the NSSE conceptual understanding of students' engagement and learning gains (NSSE, 2013), the purpose of this study was to investigate the influence of student-faculty interaction, supportive environment, and effective teaching practices on students' perceived learning gains in a Francophone university in Lebanon. Interviews with the dean of the Faculty of Science and chairpersons of 4 departments on the one hand, and a survey completed by students on the other hand were used to collect data and triangulate results, which highlighted areas of strength and weakness when crossing administrators and students' responses.

Since we mainly targeted students' learning gains, we crossed responses from all participants in terms of interaction, support and practices. An important factor was highlighted by the Dean who considered that the teaching and learning process should focus on students' learning outcomes and how they can gain the necessary knowledge and skills to ensure a high quality education, and optimize students learning gains as also confirmed by Gudeva et al., 2012. The dean ascertained that the university is providing a supportive environment that can improve student-faculty interaction, which is in line with the recommendations of the European Higher Education Area (ENQA, 2015). Meeting the dean' vision to a large extent, though they did not mention the learning outcomes, chairpersons were applying with instructors the strategies that engage students in the teaching and learning process, focusing in their teaching practices on field trips, teamwork, and project building. This starting point was also met by the students themselves who considered in 4 out of the 5 categories of the effective teaching practices that they were, to a certain extent, benefitting from faculties' explanations of course goals, explaining difficult concepts with illustrations, making use of instant feedback on tests and assignment, and moderately correlating these practices to "thinking clearly and effectively". This latter point confirmed the importance of students' responses because it was essentially based on the correlation with improved learning gains, especially on test or assignment feedback, or varying ways of explaining difficult ideas. This point ascertained what Wood (2009) and Kotecha (2011) found about the prompt feedback

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

usefulness as a formative assessment means to maintain students' interest in learning and improve their self-efficacy.

On the other hand, administrators insisted on the importance of students' advisory, providing supportive material, and student-faculty communications as essential academic practices that encourage engagement. However, students' responses did not really reflect the dean and chairpersons' strong views of student-faculty interaction, since most students' perceptions of these interactions were below average percentages. Moreover, moderate correlations were observed between student-faculty interaction measures and learning gains; these were mainly related to activities with instructors other than coursework, diversity, and solving real-world problems. Students' discussion with advisors, and clearly and effectively speaking with instructors remained also moderately correlated, which is in line with Vaughan's (2014) findings that revealed a weak correlation between the student-faculty interaction and students' academic performance. The only exception in this area was related to students performing activities other than coursework with their instructors in which students correlated this practice to nine out of ten learning gains. They correlated the supportive environment for learning to social opportunities on campus and to effective writing. These findings confirm previous research studies that correlated the supportive environment to successful students' engagement in the university's life (Vaughan, 2014; Othman, 2013; Shim and Walczak, 2012; BrckaLorenz et al., 2012). What made a difference to build on was a strong correlation between students' learning gains and the supporting material offered by the FS, mainly influencing improvement in writing effectively, benefiting from social opportunities, acquiring job-related skills, and expanding participation in campus activities to improve students' awareness of citizenship importance with accrued attendance of on campus events. Those are important results that show the way for students' better engagement and their ability to achieve.

5. Conclusion and Suggestion

The purpose of our study was to investigate the influence of student-faculty interaction, supportive environment, and effective teaching practices on students' perceived learning gains. Results showed that the university administrators and students considered these points as important engagement factors leading to improvement in student learning, though at different levels. Three hypotheses were tested but none could be fully validated. Many elements leading to moderate influence and some for strong influence were observed regarding learning gains in correlation with student-faculty interaction, teaching practices, and especially the supportive environment whereby many indicators showed a strong correlation.

The importance of this research stems from the fact that it is about a portion of student life, building relations and acquiring knowledge and skills. Specifically, it pointed out that explaining course learning outcomes was substantial for engaging students in the teaching and learning process, providing feedback on exams and assignments was significant for students because they correlated it with several learning gains, and creating opportunities for

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

communication between students and their instructors was considered as an essential aspect. This latter point needed to be reviewed for a better learning experience leading to engagement with "advisory" as a crucial element. It was clear that instructors would need some training on how to advise students for a better global learning experience, or on how to further develop their interactive teaching methods. This interpretation offers an opportunity to enhance the faculty development activities at the selected institution for an improved supportive environment based on a holistic approach to teaching and learning that takes into consideration the education of the whole person as mentioned in the university educational mission.

The study confirmed previous research results based on constructivism and quality education, revealing the positive effect of student engagement on their academic and personal development when supported by the institution. Nonetheless, it calls for more collaboration between students and instructors through better implementation of the supportive environment practices that already began with varied teaching practices at the Faculty. These should, however, be fostered in parallel with other measures to engage students. While some limitations had to be considered when implementing the study, they could be considered as opportunities for future research. One of these limitations was the implementation of the research in one Faculty; it is recommended to replicate such research on a larger scale, even within the same university, to disseminate results and promote a continuous student engagement process. Another limitation was that data was mainly based on perceptions; including students' grades could enhance these results with more accurate outcomes concerning learning gains and the effectiveness of teaching practices.

Conflict of Interest

The authors of the article declare no conflict of interest.

Funding

This research study was not funded by any institution. The authors conducted the study at their own expenses.

References

Abucay, A. J. (2009). Factors that may affect the Learning Process. Retrieved from http://www.infosforyouandme.com/2009/04/factors-that-may-affect-learning.html

Alt, D. (2015). Assessing the contribution of a constructivist learning environment to academic self-efficacy in higher education. *Learning Environments Research*, *18*(1), 47-67.

Anub, C. D. (2020). Factors Contributing to the English National Achievement Test (Nat) Performance. Middle Eastern Journal of Research in Education and Social Sciences, 1(2), 131-150.

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

BrckaLorenz, A., Ribera, T., Kinzie, J., & Cole, E. R. (2012). Examining Effective Faculty Practice: Teaching Clarity And Student Engagement. *To Improve the Academy*, *31*(1), 148-159.

Chickering, A. W., &Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE bulletin*, *3*, 7.

CSEQ The College Student Experiences Questionnaire Assessment Program. (2007). Retrieved fromhttp://cseq.indiana.edu/cseq_content.cfm (accessed 20 October 2020).

Daskalovska, N., Gudeva, L.K., &Ivanovska, B. (2012).Learner motivation and interest. *Procedia-Social and Behavioral Sciences*, *46*, 187-1191.

Dicker, R., Garcia, M., Kelly, A., Modabber, P., O'Farrell, A., Pond, A., ... &Mulrooney, H. M. (2017). Student perceptions of quality in higher education: effect of year of study, gender and ethnicity. *New Directions in the Teaching of Physical Sciences*, *12*(1).

European Association for Quality Assurance in Higher Education (ENQA). (2015).*Standards and guidelines for quality assurance in the European Higher Education Area (ESG).* Brussels, Belgium.

Frey, B.B. (2018).*The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation*. SAGE Publications.

Gliem, J.A. &Gliem, R.R. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. Paper presented at*Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education*, Midwest, USA. Retrievedfrom https://scholarworks.iupui.edu/bitstream/handle/1805/344/Gliem%20&%20Gliem.pdf ?s..

Gudeva, L. K., Dimova, V., Daskalovska, N., &Trajkova, F. (2012). Designing descriptors of learning outcomes for Higher Education qualification. *Procedia-Social and Behavioral Sciences*, *46*, 1306-1311.

Hakes, C.J. (2010).*Off-campus work and its relationship to students' experiences with faculty using the college student experiences questionnaire*. PhD Thesis, University of South Florida, USA.

Hein, G. (1991). Constructivist learning theory. In: Institute for Inquiry. Retrieved from http://beta.edtechpolicy.org/AAASGW/Session2/const_inquiry_paper.pdf

Kuh, G.D. (2001). Assessing what really matters to student learning inside the national survey of student engagement. *Change: The Magazine of Higher Learning*, 33(3), 10-17.

Kumar, V. (2009). Factors that may affect the Learning Process. Retrieved from http://ugcnetonline.svtuition.org/2009/03/factor-affecting-teaching.html

Kearsley, G. &Shneiderman, B. (1998).Engagement theory: A framework for technology-based teaching and learning. *Educational technology* 38(5), 20-23.

Kotecha, M. (2011).Enhancing students' engagement through effective feedback, assessment and engaging activities. *Msor Connections*, 11(2), 4-6.

Lundberg, C.A. &Schreiner, L.A. (2004). Quality and frequency of faculty-student interaction as predictors of learning: An analysis by student race/ethnicity. *Journal of College Student Development*,45(5), 549-565.

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0

Middaugh, M.F. (2011).*Planning and assessment in higher education: Demonstrating institutional effectiveness.* John Wiley and Sons.

Nauffal, D. (2016).Assessment of Student Engagement. Retrieved fromhttps://laur.lau.edu.lb:8443/xmlui/handle/10725/3424

NSSE National Survey of Student Engagement. (2020).Engagement Indicators. Retrieved fromhttps://nsse.indiana.edu/html/engagement_indicators.cfm

NSSE National Survey of Student Engagement. (2013).NSSE's Conceptual Framework. Retrieved from https://nsse.indiana.edu/nsse/about-nsse/conceptual-framework/index.html

Othman, N., Nordin, F., Nor, N. M., Endot, Z., Azmi, A., Ismail, I., &Yaakob, A. (2013). Factors influencing students' academic aspirations in higher institution: A conceptual analysis. *Procedia-Social and Behavioral Sciences*, *90*, 411-420.

Pace, C.R. &Kuh, G.D. (1998). College Student Experiences Questionnaire. Report, Center for Postsecondary Research, Indiana University, Bloomington, USA, Spring.

Pascarella, E. T., Seifert, T. A., &Blaich, C. (2010). How effective are the NSSE benchmarks in predicting important educational outcomes?. *Change: The Magazine of Higher Learning*, *42*(1), 16-22.

Shim, W. J., &Walczak, K. (2012). The Impact of Faculty Teaching Practices on the Development of Students' Critical Thinking Skills. *International Journal of Teaching and Learning in Higher Education*, *24*(1), 16-30.

Smagorinsky, P. (2013). The development of social and practical concepts in learning to teach: A synthesis and extension of Vygotsky's conception. *Learning, Culture and Social Interaction*, *2*(4), 238-248.

Spady, W. (1993).Outcome-based education. *Australian Curriculum Studies Association.*

Umbach, P. D., &Wawrzynski, M. R. (2005). Faculty do matter: The role of college faculty in student learning and engagement. *Research in Higher education*, *46*(2), 153-184.

Vaughan, N. (2014). Student engagement and blended learning: Making the assessment connection. *Education Sciences*, *4*(4), 247-264.

Wood, W.B. (2009).Innovations in teaching undergraduate biology and why we need them. *Annual review of cell and developmental biology* 25.

Woodson,S.K. (2010).*Curapersonalis in online undergraduate Christian higher education*. [Doctoral Dissertation], Capella University, USA.

Copyright © 2020, Middle Eastern Journal of Research in Education and Social Sciences (MEJRESS), Under a Creative Commons Attribution 4.0