



Effect of Different Motivational Factors on The Academic Performance of Foundation Year Students at the University of Sharjah

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Abstract

Objective: The purpose of this research is to investigate the relationship between foundation-year GPA -as a measure of academic performance- with different types of motivating factors towards studying medicine among students at the University of Sharjah. **Methodology:** the study used a cross sectional design with a target population of 158 students at the university of Sharjah college of Medicine, 45 students were included in the study by means of convenience sampling, measurement of intrinsic and extrinsic factors' prevalence was conducted by a self-designed, self-administered questionnaire with elements from the Intrinsic Motivation Inventory (IMI). Questionnaires were administered prior to a PBL session conducted in December 2018. 13 responses were discarded due to incomplete responses. Data entry and analysis was done using SPSS 25. **Results:** out of 32 respondents (43.8% of which were males and 56.3% females), findings suggest a stronger correlation between extrinsic factors (0.208) -materialistic factors more specifically- and higher academic performance in relation to intrinsic factors (-0.191). A strong association between intrinsic and extrinsic motivational factors was found indicating their confounding influence with no apparent extreme predomination ($p < 0.01$). No significant correlations were found relating specific motivational factor prevalence with gender. **Conclusions:** extrinsic motivational factors play a bigger role in enhancing medical students' academic performance than intrinsic factors.

Keywords:

Motivation, Psychiatry, Medical, Students, University, Motives



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1. Introduction

1.1 Background

In order to produce competent healthcare providers that are well equipped to adapt to the highly demanding career of medicine, medical programs at universities subject their students to a highly selective procedure, which detects those with the adequate abilities, skills and dedication and chooses them to embark on the journey of medical education. Such an effortful and fastidious procedure imposes high levels of stress on students^[1], causing them to suffer from academic stress^[2] and pushing them towards questioning their motives, this is especially true for first year medical students learning in a PBL based curriculum^[3] and students who experience prolonged periods of burnouts^[4]. The result is an increased uncertainty towards resuming studies in the medical field and adherence to it, as well as a decreased drive for learning^[5]. Therefore, the importance of identifying such motivational reasons and reinforcing them arises as an influential factor in the academic output of medical students, their will to accumulate and apply medical sciences, and their commitment to medicine both as a university major and a future career.

Motivation was explained by Deci and Ryan's (1985, 1991) self-determination theory (SDT) as the impulse toward doing something; motives responsible for our behavior can be classified or *oriented* into 3 types:

1. Intrinsic motives (done voluntarily to seek inherently and spontaneously satisfactory feelings from an action, indicates the person's natural interest and passion towards the activity he/she is motivated to do, acting as an *internal perceived locus of causality* according to the attribution theory^[6]).
2. Extrinsic motives (done for the external gratification or reward/ outcome after an action's completion, may or may not express a person's interest and is usually temporary).

3. Non-existent motives (amotivated behaviors, which aren't intentional nor regulated)^[7].

Previous studies regarding academic efficacy of students were abundant, but students' motivational reasons were considered secondary factors in their effect on academic output^[8-11]. This study aims to assess the direct effect of different motivational variables -both intrinsic and extrinsic- and their significance on the academic output and efficacy of medical students, and whether the presence of foundation year had a modulatory influence on students' motives and view of medicine as a university major. Research involving students of Arabic origin in a PBL based learning scenario can provide a clear picture regarding motivational disparities among students of such demographic characteristics -given their cultural backgrounds-, and putting into consideration the diverse cultural and societal variations among them, and how each subtype of motivation has its own magnitude of influence on the learning process of each student -represented by their academic performance in different subjects and their total GPA-. Such motives can be targeted later to be modulated, enhanced or replaced by alternative, more powerful incentives -depending on the magnitude of influence of each- by students, their families or by educational institutes, boosting academic performance and enhancing their commitment to studying medicine, improving the overall quality of graduate students' knowledge and behavior.

Study Purpose: to investigate the direct relationship between motivational reasons of first year medical students, after finishing the foundation year at Sharjah university, with their academic performance and mental wellness throughout their studies.

1.2 Research Objectives

General Objective:

To assess the relationship between foundation-year GPA -as a measure of academic performance-



and different types of motivating factors towards studying medicine among students at the University of Sharjah.

Specific Objectives:

1. To identify the common motivating factors of university students.
2. To identify which motivating factors were most strongly correlated with better grades in the Foundation Year in Sharjah University - College of Medicine.
3. To estimate the probability of motivating factors changing throughout the Foundation Year of University of Sharjah
4. To find the possible gender-dependent variations in motivational reasons among medical students

2. Materials and Methods:

2.1 Research Population

This study is an observational cross-sectional study conducted in Sharjah University in the United Arab Emirates during the month of December \ 2018, towards the end of the first semester. Target population included first year medical students at the university of Sharjah {158 students}. The sample size for the population was determined by student availability. A total of 45 students were available during the time of data collection.

2.2 Inclusion and Exclusion Criteria

Any first-year medical student available on campus during PBL sessions was included

The following categories were excluded from the study:

- Non-medical students.
- Medical students of other years.
- Transfer students.
- Students repeating year 1.

2.3 Research Instruments

To assess students' intrinsic and extrinsic factors, a self-administered structured questionnaire with closed ended questions was used. The aim of the questionnaire and the study were explained, and the anonymity and optionality of participation were emphasized in the information sheet to eliminate recall bias. The questionnaire used a 5 item Likert scale to measure response, questions included were self-designed (all extrinsic factors and 2 intrinsic factors "question 5 and question 10"), in addition to incorporation of the Intrinsic Motivation Inventory (IMI) in question design. Score of each subscale would give a rough numerical estimation of the magnitude of effect of each subscale (high/ low motivation) on students' academic performance.

To target both types of motivating factors, the following subscales were used:

- Intrinsic:
 - Interest/Enjoyment.
 - Perceived Competence.
 - Effort/Importance.
- Extrinsic:
 - Social factors.
 - Financial factors.

Questions were translated to Arabic and revised by an Arabic language specialist and questionnaires were available in both Arabic and English languages, a pilot study was conducted to assess the questionnaire and changes were applied as needed.

Forty-five paper questionnaires have been printed out and distributed on first year medical students in the university of Sharjah after completing their last PBL session of the first trimester. Participants were given ten minutes to complete the questionnaire after which they placed the survey in a brown opaque folder without the conductor having a look at it. Additionally, standardized manner of collection was applied to ensure no bias is involved.

All available students completed the questionnaires with a response rate of 100%, (13) questionnaires were excluded due to non-amendable incomplete responses, for a total of (32) questionnaires used for analysis.

3. Results

Table 1: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	14	43.8	43.8	43.8
	Female	18	56.3	56.3	100.0
	Total	32	100.0	100.0	

3.1 Demographics

Data entry and analysis were performed electronically using SPSS v25.A total of 32 questionnaires were analyzed. Respondents were 43.8% males (n=14) and 56.3% females (n=18), shown in (Table1).

Cumulative GPA values were self-reported and found to have a mean of 3.7, total responses can be seen in Figure-1.

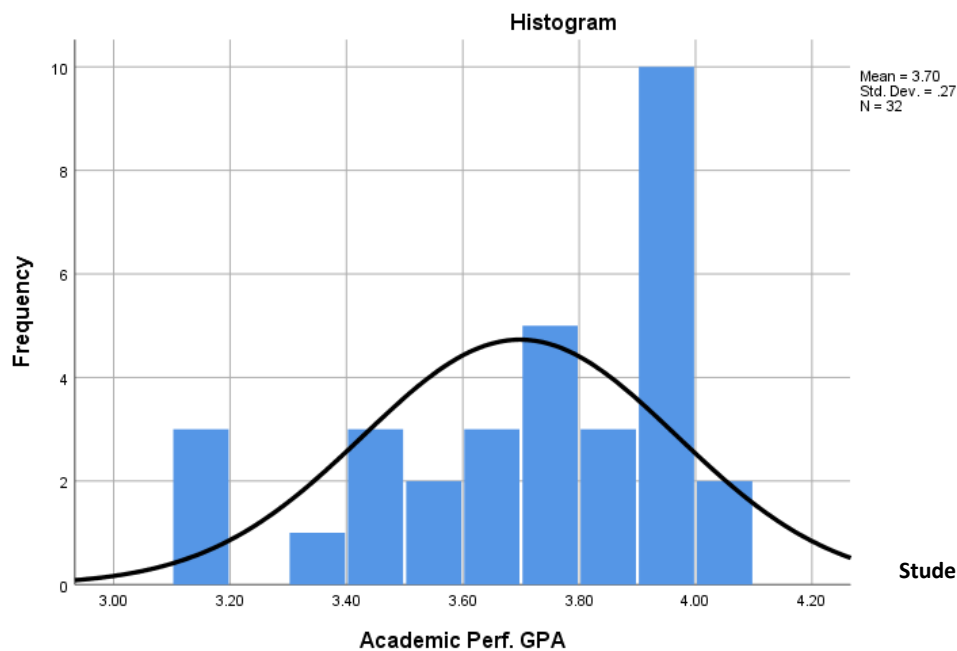


Figure -1
Student cGPA scores

3.2 Motivational factors

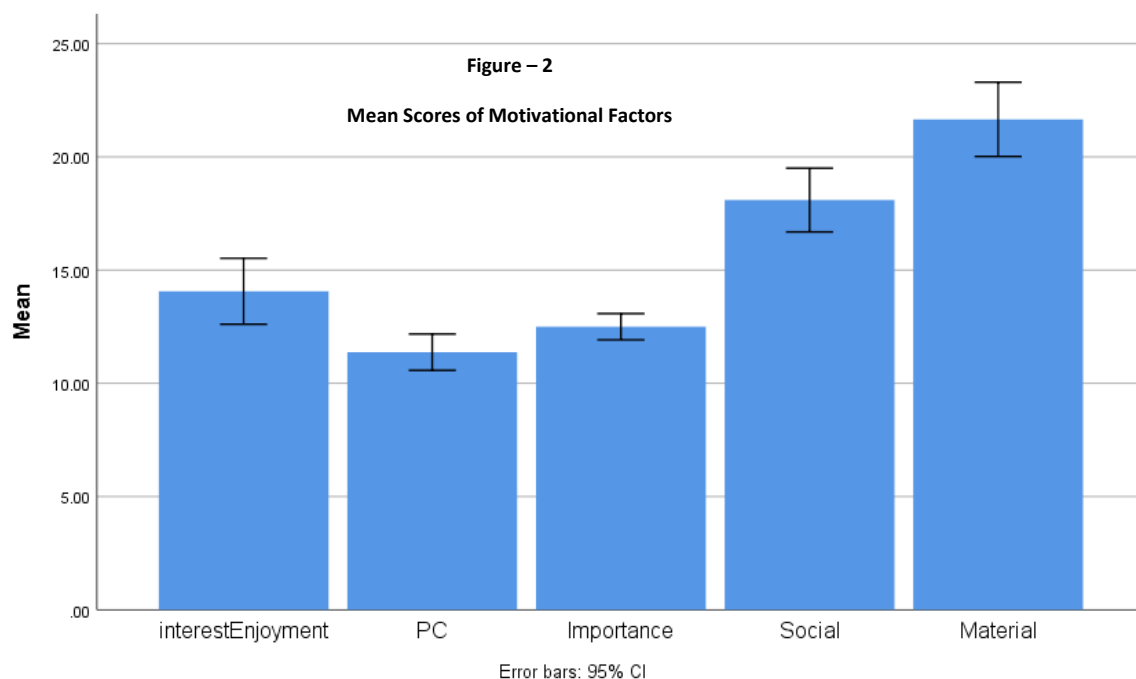
Intrinsic motivation factors were divided into three subdivisions: Interest/Enjoyment, Perceived Competence (PC) and Importance, of all three, Interest and Enjoyment was the most prevalent

among students. Extrinsic factors were divided into two subdivisions: social and material factors, of the two, material factors had shown more prevalence among students. The overall frequencies of all measured factors are summarized in (Table2).

Table 2: Motivating Factors Frequencies

		Interest / Enjoyment	PC	Importance	Social	Material
N	Valid	32	32	32	32	32
	Missing	0	0	0	0	0
Mean		14.0625	11.3750	12.5000	18.0938	21.6563
Median		15.0000	12.0000	13.0000	18.5000	21.5000
Std. Deviation		4.03962	2.22522	1.60644	3.90500	4.54802
Minimum		4.00	5.00	9.00	8.00	10.00
Maximum		20.00	15.00	15.00	25.00	30.00
Sum		450.00	364.00	400.00	579.00	693.00
Percentiles	25	11.2500	10.0000	11.2500	15.5000	18.2500
	50	15.0000	12.0000	13.0000	18.5000	21.5000
	75	17.0000	13.0000	14.0000	20.7500	24.7500

Prevalence of each motivating factor can be depicted by the following graph including means of response scores regarding each subdivision:



After correlating with student cGPA grades, extrinsic factors had shown stronger correlation of with a higher cGPA score (Pearson correlation=0.208) compared to intrinsic factors (Pearson correlation=-0.191). further correlations with gender are highlighted as shown in (Table3).

Table 3: Correlations of Intrinsic and Extrinsic Factors with GPA and Gender

		Internal	Gender	external	Academic Perf. GPA
Internal	Pearson Correlation	1	.257	.590**	-.191
	Sig. (2-tailed)		.156	.000	.296
	N	32	32	32	32
Gender	Pearson Correlation	.257	1	.086	-.160
	Sig. (2-tailed)	.156		.639	.381
	N	32	32	32	32
external	Pearson Correlation	.590**	.086	1	.208
	Sig. (2-tailed)	.000	.639		.253
	N	32	32	32	32
Academic Perf. GPA	Pearson Correlation	-.191	-.160	.208	1
	Sig. (2-tailed)	.296	.381	.253	
	N	32	32	32	32

** . Correlation is significant at the 0. 01 level (2-tailed).

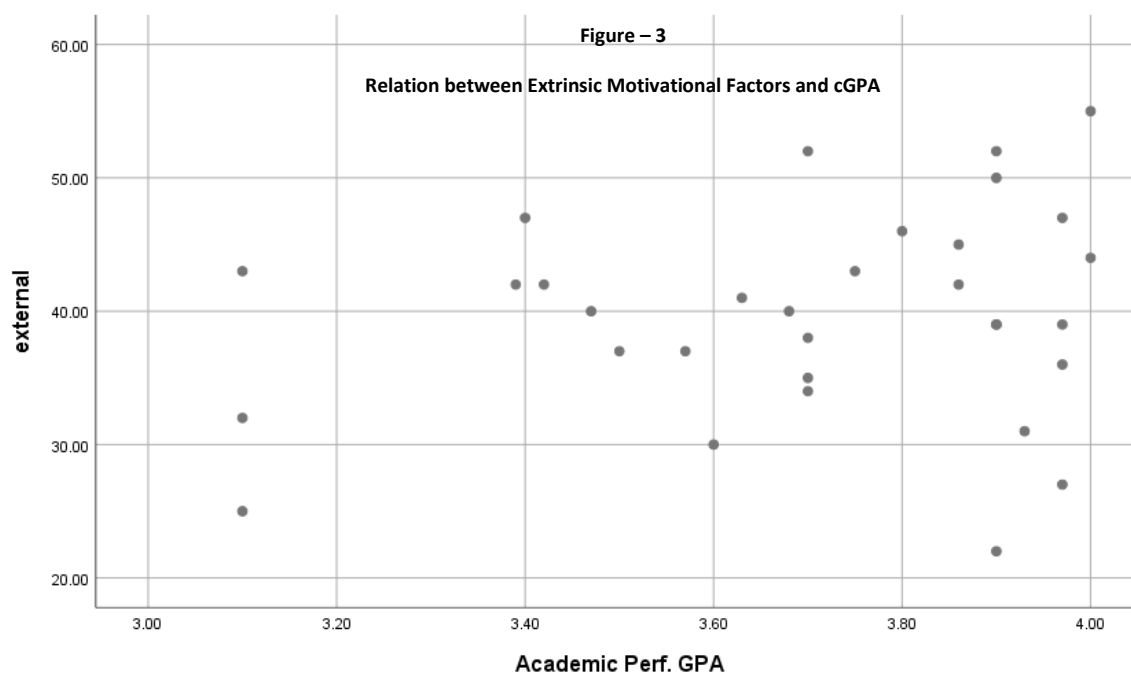
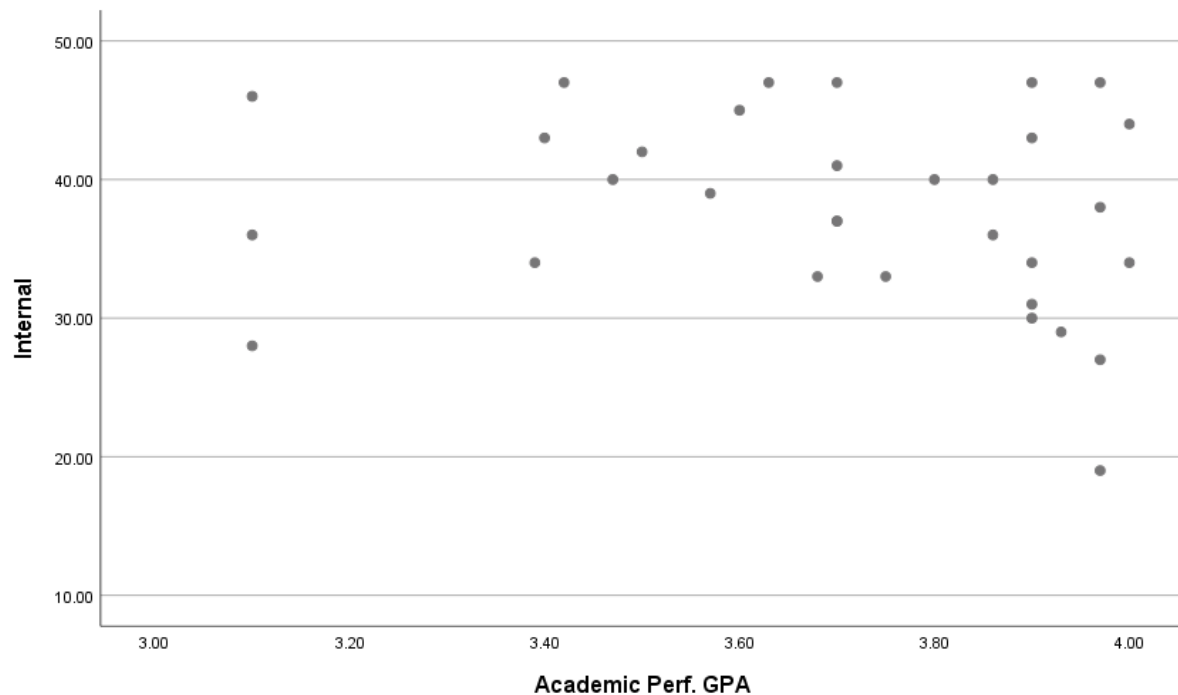


Figure 4: Relation between Intrinsic Motivational Factors and GPA



3.3 Switching Motivational Reasons

Mean response values are slightly over neutral value, indicating a slightly noticeable change in factors motivating medical students.

Table 4: change in motivational impulse

Change in Motives

N	Valid	32
	Missing	0
Mean		3.8750
Median		4.0000
Std. Deviation		1.07012

4 Discussion

4.1 Motivation and Academic Performance

As findings prove better cGPA grades to be associated more with students who are extrinsically motivated -materialistically-, it is safe to say that focusing on external gratification among students in medical faculty at the university of Sharjah is a better way of improving their grades and overall academic performance than trying to change or add to their intrinsic motivation factors. Despite the great long-term benefits of intrinsic motivation proven by literature^[12], and its more potent positive influence on mental health and productivity, it still requires more effort and patience to change a student's behavior. Furthermore, short term rapid improvement that results from extrinsic motivation can -if maintained for sustained periods/ intervals of time- turn into potent positive influence that improves general productivity -including academic aspects- using the same principles of classic conditioning.



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Findings also suggest that Sharjah university students are materialistically and socially attracted to medicine rather than being truly passionate and intrinsically motivated about it, indicating an external drive that may also be the result of other factors (family pressure/ financial situation), necessitating the need for cognitive modification / intervention to change students' thinking paradigm towards medicine and the way medicine is perceived by them, not to only improve their GPA on the longer run, but to enhance their will to contribute to the medical field.

Responses indicate a change in motivational impulses that's noticed by students themselves, this is especially important as it indicates a turning point after finishing foundation year that plays a role in modifying students' outlook towards medicine and studying it as a future career, the direction of inclination of such change was not measured (whether positive or negative), but it is speculated that utilizing this period of change in perspective to introduce extrinsic motives may help improve student interest in medicine, sparing them the slowly growing feeling of obligation towards a career rather than building passion towards it.

4.2 Study Limitations

The study sample size was not of great magnitude which may affect the generalizability of the results to all medical students, however multiple academic performance levels were noted indicating some degree of diversity and ability to generalize findings. Larger sample size is required for further study into this topic and to measure effect size more accurately.

Use of self-designed questions may be of less accuracy in determining extrinsic motivation effect, however pilot study results were adequate to verify the suitability of the questionnaire to current sample size. Further tool development would be advised for larger, more diverse samples and to achieve more significant results.

5 Conclusions

Considering previously discussed findings and interpretations, it is recommended that educational facilities -as well as people involved in the educational career of a medical student- should pay more attention to providing external gratifications (i.e. learning facilities, excellence bonuses, tempting discounts upon enhanced performance,) for students that are suffering academically to improve their performance promptly.

It is also suggested to implement supplementary material in the medical education course during the foundation year to maintain levels of intrinsic motivation students have and possibly support them, hereby decreasing the likelihood of demotivation as a consequence of continuing medicine on the basis of external gratification alone.

References

1. Dahlin M, Joneborg N, Runeson B. Stress and depression among medical students: a cross-sectional study. *Med Educ*. 2005; 39:594-604.
2. Elhag, O. (2022). Outcome Of Antenatal CARE PLANNED VBAC Versus Unplanned VBAC, *International Journal Of Applied Technology In Medical Sciences*, 1(1), 4-18 10.54878/IJATMS.206
3. Elhag, O. (2022). Case Report Of Bilateral Renal Agenesis (Potter S Syndrome) At 26 Weeks Gestational Age, *International Journal Of Applied Technology In Medical Sciences*, 1(1), 19-25 10.54878/IJATMS.207
4. Sohail, N. (2013). Stress and academic performance among medical students. *J Coll Physicians Surg Pak*, 23(1), 67-71.
5. Moffat, K. J., McConnachie, A., Ross, S., and Morrison, J. M. (2004). First year medical student stress and coping in a problem-based learning medical curriculum. *Medical education*, 38(5), 482-491.
6. Daniel Pagnin, Valéria De Queiroz, Márcio Amaral De Oliveira Filho, Naira Vanessa



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- Anomal Gonzalez, Ana Emília Teófilo Salgado, Bernardo Cordeiro E Oliveira, Caio Silva Lodi and Raquel Muniz da Silva Melo (2013) Burnout and career choice motivation in medical students, Medical Teacher, 35:5, 388-394, DOI: 10.3109/0142159X.2013.769673.
7. Kusurkar, R. A., Croiset, G., Galindo-Garré, F., and Ten Cate, O. (2013). Motivational profiles of medical students: association with study effort, academic performance and exhaustion. BMC medical education, 13(1), 87.
8. Kelley, H. H., & Michela, J. L. (1980). Attribution Theory and Research. Annual Review of Psychology, 31(1), 457-501. doi: 10.1146/annurev.ps.31.020180.002325
9. Ryan, R. M., and Deci, E. L. (2000). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. Contemporary Educational Psychology, 25(1), 54-67. doi:10.1006/ceps.1999.1020.
10. Baker, S. R. (2004). Intrinsic, extrinsic, and amotivational orientations: Their role in university adjustment, stress, well-being, and subsequent academic performance. Current Psychology, 23(3), 189-202.
11. Struthers, C. W., Perry, R. P., and Menec, V. H. (2000). An examination of the relationship among academic stress, coping, motivation, and performance in college. Research in higher education, 41(5), 581-592.
12. Ahn, D., Park, G., Baek, K. J., and Chung, S. I. (2007). Academic motivation, academic stress, and perceptions of academic performance in medical students. Korean Journal of Medical Education, 19(1), 59-71.
13. Moneta, G. B., and Siu, C. M. (2002). Trait intrinsic and extrinsic motivations, academic performance, and creativity in Hong Kong college students. Journal of College Student Development.
14. Tavani, C. (2003). How Academic Performance, Motivation, and Self-Confidence Impact Academic Expectations. PsycEXTRA Dataset. doi: 10.1037/e344752004-001