

## **Academic Motivation and Psychological Well-Being of university students taking online classes amid Covid-19 Pandemic**

**Ghania Yamin & \*Rabia Muzaffar**

Institute of Professional Psychology, Bahria University, Karachi Campus

The present study aimed to explore the impact of online education on academic motivation and psychological well-being of university students amid coronavirus (COVID-19) pandemic. Sample of the study comprised of 278 students from different private and government universities of Pakistan (Males  $n=68$  & Females  $n=210$ ). In a quantitative correlation survey research design Academic Motivation Scale (Vallerrand, et al., 1992) and Psychological Wellbeing Scale (Ryff, 1989) were administered with a detailed demographic form. Findings of the study showed that amotivation and intrinsic motivation are significant predictors of psychological wellbeing among university students taking online classes amid pandemics. The implications of the study are for universities and educational institutes to design effective methodologies and strategies to enhance students' academic motivation to influence their psychological well-being during the stressful period of pandemic and transition to online education of university students.

*Keywords:* Coronavirus (COVID-19), Pandemic, Online education, Academic motivation, Psychological well-being, University students.

The World Health Organization (WHO) stated Coronavirus (COVID-19) as a universal emergency on January 30<sup>th</sup>, 2020, and a global epidemic on March 11<sup>th</sup>, 2020. At the time, affecting 213 countries and territories (WHO, 2020). However, as this unique situation arose and spread throughout the globe, many countries resorted to harsh social distancing and a plain lockdown policy. The emergence of COVID-19 has left a drastic impact on students, instructors, and educational organizations across the globe (Mailizar, et al., 2020). This pandemic ceased learning by causing schools, colleges, and universities across the world to shut down their campuses to ensure students are able to take social distancing measures (Toquero, 2020). Obviously, this pandemic left immense effects on the educational sector. Despite that being the case, transitioning from conventional/ traditional face to face education system to distance learning. Virtual learning was a very big challenge which cannot be dealt overnight. This swift revolution is still to date linked to various hindrances and trials (Crawford, et al., 2020). However, because everyone is unaware as to when this pandemic diminishes fully, educational institutes worldwide decided to resort to present accessible technical/mechanical resources to make online schooling content for pupils of all academic fields (Kaur, 2020). Electronic learning (e-learning) has been considered the best approach to teaching and learning in this pandemic (Frenette, et al., 2020).

An online learning environment refers to any setting that uses the internet to deliver some form of instruction to learners separated by time, distance, or both (Dempsey & Eck, 2002). Several studies have been conducted with specific focus on the strengths and weaknesses of online learning that explore the perspective of online learners. For example, participants in Petride's (2002) study reported that reflections occurring because of participating in the online class were a

---

\* Correspondence concerning this article should be addressed to Rabia Muzaffar, Institute of Professional Psychology, Bahria University, Karachi Campus, Pakistan. Email: [rabiamuzaffar.ipp@bahria.edu.pk](mailto:rabiamuzaffar.ipp@bahria.edu.pk)

positive aspect of the course and they felt they thought more deeply when responding in writing. Strength of online course that has been identified in the literature is flexibility (Schrum, 2000). Therefore, major focus of research studies of online learning is on the challenges faced by learners in online courses. For example, some studies have identified the lack of immediate feedback to posted questions a challenge. In these studies, students often felt that the questions would have been resolved immediately in a traditional classroom setting (Hara & Kling, 1999; Petrides, 2002).

Although educational institutes have rapidly adopted online schooling due to pandemic but with limited or no experience with e-learning and lack of resources with inadequate teachers' training led to various experiences of difficulty (Zaharah & Kirilova, 2020). Furthermore, students also did not have sufficient access to internet or devices that facilitate e-learning experience which became a source of stress for students and parents both. All this has greatly compromised student's quality of education and academic motivation. Similarly, in a country like Pakistan, online education is a new concept. To analyse the practice, a study was conducted to gain perspective of higher education students on online learning amid Coronavirus (COVID-19). The findings reported that it could not provide desirable results in an underdeveloped country like Pakistan as many of the students could not access internet and other required resources due to technical or financial constraints (Adnan & Anwar, 2020). Even though hundreds of institutions provide online courses, but two problems do exist. First, from a command viewpoint, there has been very little establishment regarding the effects and efficacy of online education (McPherson & Bacow, 2015). Second, the ability to successfully teach digitally can differ depending on the wide range of learning goals that guide our instructional and educational priorities (Liguori & Winkler, 2020). Emergency Online Teaching (EOT) was adopted to deal with several challenges such as lack of competence in teachers for teaching, using online learning digital management systems, internet connectivity shortcomings and resistance of teachers to use online education system. The study found that EOT and learning is desirable and doable, therefore, educational stakeholders were encouraged to invest and facilitate the adoption of EOT to make learning conducive in rural contexts (Molise & Dube, 2020).

Mullen and Tallent-Runnels (2006) discovered that students taking online classes and traditional face-to-face classes have different perceptions or views regarding classroom settings, support and demands of instructors. These changes in perception were in relation to students' motivation, course fulfillment, and learning. They concluded that instructors need to be cautious of not considering that teaching the same in both environments will suffice and create similar results. Similarly, researchers need to alter their assertion that motivation theories established in traditional face-to-face classrooms and other settings can be directly transplanted to the online learning environment without authentication, because certain characteristics (e.g., flexibility, accessibility, & computer-mediated communications) of the learning environment and the dynamics of student motivation are different for both settings. Therefore, a thorough/detailed investigation of online learners' motivation, including practically testing self-determination theory in the online learning environment is necessary. Researches have reported heightened level of psychological distress among university students (Rosal, et al., 1997). Currently, the global pandemic COVID-19 has taken the front seat in causing stress and psychological distress. This has also led to a feeling of uncertainty and fear among many (Sahu, 2020). This has alerted a greater need for understanding psychological wellbeing of students. However, increasing levels of psychological distress in students are a great concern especially amongst students in higher education.

Psychological well-being changes with time i.e., there are various internal and external factors affecting mental health of students for e.g., financial concerns, socio-economic status, etc. (Roberts, et al., 2000). However, emergence of global pandemic COVID-19 has damaged the health and economy of the world. It has caused fear and panic among people of all ages as it continues to spread. Moreover, it has also caused psychological distress due to its contagious nature, absence of definitive treatment and physical isolation. It has also shifted the focus to preventing spread of disease through containment in the form of lockdown and social distancing policies. This has led general population's psycho-social wellbeing needs unaddressed. It has prompted the closure of various universities to ensure safety of students and staff by postponing or cancelling classes. (Sahu, 2020). A study reported significant impact on sleep and psycho-emotional wellbeing of students as a result of lockdown (Marelli, et al., 2021). Similarly, in a developing country like Pakistan, a study to record higher education student's perspective about online learning showed unsatisfactory results regarding their well-being (Adnan & Anwar, 2020). Hence, the changes in the educational paradigm and daily functioning may hinder the psychological wellbeing of students.

There have been several researches on numerous online learning dimensions such as barriers, impact of online learning on students, academic achievement but very few on attitude of students towards online learning (Shahzad et al., 2020). Therefore, it is important to gain insight regarding the impact of online learning on students' academic attainment to come up with effective solutions (Frenette, 2007). This study aimed to reach out students to express their concerns regarding online classes amid pandemic on their academic motivation and mental wellbeing. These various stressors make it difficult for a student to adjust academically. This inability to adjust leads to stress which puts their mental health in a state of jeopardy. However, availability of support shields student's mental health from these stressors and promotes adjustment to these major stressors (Bolger et al., 2000). Motivation is one of the most vital psychological concepts in education settings (Ryan & Deci, 2000). Education is usually linked with stress. Various factors contribute to stress in students. It is clearly stated through research evidence that motivation should be taken seriously in the light of online learning environment. There are three types of motivations intrinsic, extrinsic and amotivation. Intrinsic Motivation is the act of doing the activity for itself and the pleasure and satisfaction derived from engaging in that activity. Extrinsic Motivation can be defined as various behaviors that one engages in as a means to an end and not for their own sake while amotivation is lack of any type of motivation or absence of any motivation (Vallerand et al., 1992).

Current study aims to explore the role of self-determination theory (Ryan & Deci, 2000a) in the light of pandemic COVID19 and the impact it has on the psychological well-being of students. This study is important to provide information to Ministry of Education and academic organizations to improve its preparedness to contain effects of COVID-19 on the education sector. Moreover, limited literature is available on the role of academic motivation on psychological wellbeing of students amid pandemic. This data could be further used to devise strategies to promote positive sense of psychological wellbeing, increase motivation and efficiency in academic and personal domains of university students in Pakistan. It can provide valuable insight to improve online learning practices. It further leads way to discussion of overcoming online education barriers and maximizing the benefits of online education during this pandemic and above all voicing out student's concerns regarding it. As during this stressful period of pandemic there is a need of establishing effective interventions that can aid students in their transition to online

education system. Hence, the current study aims to see the impact of academic motivation on psychological well-being of university students having online classes amid pandemic.

## Method

### Research design

Current research is a quantitative correlational survey research design in which the academic motivation and psychological well-being were studied amid COVID-19 pandemic.

### Participants

For current study 278 university students (Males  $n=68$  & Females  $n=210$ ) aged between 18-25 years ( $M=21.66$ ;  $SD=1.91$ ) taking online classes during pandemic were approached using google forms through convenient purposive sampling from different universities in Pakistan. The details of the participants are given below:

**Table 1**

*Demographic information of the participants of the study (N=278)*

Characteristics	<i>f</i>	%	<i>M (SD)</i>
<b>Age</b>			21.66 (1.91)
<b>Gender</b>			
Male	68	24.5	
Female	210	75.5	
<b>Socio-economic status</b>			
Upper class	22	7.9	
Upper middle class	97	34.9	
Middle class	141	50.7	
Lower middle class	16	5.8	
Lower class	2	.7	
<b>Family structure</b>			
Nuclear	215	77.3	
Joint	63	22.7	
<b>Total family members</b>			6.35 (3.07)
<b>University system</b>			
Public university	74	26.6	
Private university	204	73.4	
<b>Mode of education</b>			
In-person classes	0	0	
Online classes	278	100	
<b>Education department/discipline</b>			
Medical	21	7.6	
Engineering	36	12.9	
Social sciences	113	40.6	
Computer sciences	36	12.9	
Management sciences	32	11.5	
<b>Education program currently enrolled</b>			
Undergraduate	189	68	

Graduate	50	18	
Post-graduate	39	14	
<b>Current enrolled in semester</b>			
<b>Fee of current semester</b>			
< 30,000	39	14	
31,000-60,000	51	18.3	
61,000-90,000	85	30.6	
> 90,000	97	34.9	
NA	6	2.2	
<b>Do you have internet access?</b>			
Yes	272	97.8	
No	6	2.2	
<b>No. of devices connected to internet at a time</b>			
1	19	6.8	
2-3	69	24.8	
4-5	122	43.9	
>6	68	24.5	
<b>Speed of internet (fast)</b>			
Always	31	11.2	
Often	137	49.3	
Sometimes	92	33.1	
Never	18	6.5	
<b>No. of people studying at university level and currently taking online classes in household</b>			2.41 (1.74)
<b>Load shedding/power failure experienced in a week</b>			
Everyday	89	32.0	
Few days	123	44.2	
Rarely	59	21.2	
Never	7	2.5	
<b>Opinion on online classes</b>			
Much more effective than regular classes	6	2.2	
Somewhat effective than regular classes	25	9.0	
Equally effective than regular classes	23	8.3	
Somewhat less effective than regular classes	110	39.6	
Much less effective than regular classes	114	41	
<b>Expected GPA/CGPA in upcoming exams</b>			
<2.0	2	.7	
2.1-2.5	13	4.7	
2.6-3.0	58	20.9	
3.1-3.5	110	39.6	
3.6-4.0	92	33.1	
NA	1	.4	
<b>Current GPA/CGPA in last given exams</b>			
<2.0	2	.7	
2.1-2.5	12	4.3	

2.6-3.0	46	16.5
3.1-3.5	101	36.3
3.6-4.0	114	41
NA	1	.4

The above mentioned table shows demographic details of the participants.

## Measures

Two measures namely Academic Motivation Scale (AMS) and Psychological Wellbeing Scale (PWB) were used to collect data of participants along with the demographic information and informed consent form.

**Demographic Information form.** The demographic information form was used to collect detailed information about the participants. The demographic information form inquired participants; Age, Gender, Socio-economic status, Family structure, Total number of family members, University enrolled in, University system, Mode of education, educational background, Class, Fee of semester, Internet connection speed, Internet devices, Load shedding/power failure issues, Concern related to online classes, Last CGPA and expected CGPA during online classes amid pandemic.

**Academic Motivation Scale (AMS).** It is a self-report questionnaire by Vallerrand et al, (1992). It consists of 28 items divided into seven subscales to assess three dimensions of motivation i.e., intrinsic, extrinsic and amotivation. The items are scored on a 7-point Likert scale ranging from 1 indicating ‘Does not correspond at all’ to 7 indicating ‘Corresponds exactly’. The translated English version of scale has Cronbach alpha value .81 indicating satisfactory level of internal consistency.

**Psychological well-being Scale (PWB-42).** It is a 42-item version of the self-report questionnaire by Ryff (1989). The items were distributed into six sub-scales: (1) Autonomy, (2) Environmental mastery, (3) Personal growth, (4) Positive relations, (5) Purpose in life and (6) Self-acceptance. The 42 items are based on a 6-point Likert scale rating ranging from: ‘Strongly Disagree’ (1) to ‘Strongly Agree’ (6). It includes reverse scoring of some items. To obtain an overall psychological well-being score, composite score is obtained by combining the scores on individual scales. There is evidence that PWB-42 is a consistent and reliable instrument when administered in general population with reliability co-efficient value of its six subscales as well as whole instrument being above .70 in a study (Kállay & Rus, 2014).

## Procedure

Permission was sought from the different universities and authors. Questionnaires were administered using Google online forms after taking informed consent and briefing regarding confidentiality and purpose of the study. Participants were encouraged to ask questions in case of any query. Convenient purposive sampling was used to collect data from males and females of different private and government universities taking online classes amid pandemic in Pakistan.

## Results

For the computation of the results a series of statistical analysis was conducted using the Statistical package for Social Sciences (SPSS-22).

**Table 2**

*Pearson Product Moment Correlation among Intrinsic motivation, Extrinsic motivation, Amotivation & Psychological well-being (N=278).*

	IN	EX	AM	PSW
IN	-	.766**	-.086	.324**
EX		-	-.151**	.243**
AM			-	-.349**
PSW				-

Note. IN= Intrinsic motivation, EX= Extrinsic motivation, AM= Amotivation, PSW= Psychological well-being

Table 2 shows the correlation between intrinsic motivation, extrinsic motivation, amotivation and psychological well-being. Intrinsic and extrinsic motivation shows a significant weak positive correlation with psychological wellbeing while amotivation has negative correlation.

**Table 3**

*Stepwise Regression Analysis showing the Predicting Role of Academic motivation in Psychological wellbeing (N=278)*

Predictors	B	$\beta$	t	F	R <sup>2</sup>	$\Delta R^2$	95% CI	
							LL	UL
<b>Step I</b>								
AM	-1.27	-.34*	-6.17	38.17	.12	.12	-1.68	-.86
<b>Step II</b>								
AM	-1.18	-.32*	-6.00	36.22	.20	.08	-1.56	-.79
IN	.43	.29*					.28	.59
EX	-.08							

Note. AM=Amotivation, IN=Intrinsic, EX=Extrinsic

Table 3 indicates that in Step I, amotivation being a significant negative predictor of psychological well-being causes 12% variance. Furthermore, in Step II amotivation and intrinsic motivation combined impact causes 8% variance on psychological wellbeing showcasing a significant positive relationship.

## Discussion

In the current study it was hypothesized that academic motivation has a significant impact on psychological wellbeing of university students having online classes during pandemic. The results showed that sub-variables of academic motivation i.e., intrinsic motivation, extrinsic motivation and amotivation indicate weak correlations with psychological wellbeing among university students taking online classes during pandemic, where intrinsic and extrinsic motivation had a positive while amotivation had a negative correlation with psychological well-being of students. The findings of the current research are not aligned with the prior literature which indicated a strong relationship between the study variables (Emadpoor et al., 2016).

Furthermore, the predicting role of academic motivation on psychological wellbeing using step-wise regression analysis, shows that amotivation and intrinsic motivation are significant predictors of psychological wellbeing. The calculated amotivation alone causes significant change (12%) in psychological wellbeing whereas amotivation and intrinsic motivation combined causes significant change (8%) in psychological wellbeing of university students taking online classes amid pandemic COVID-19. This indicates amotivation is playing a significant role on psychological wellbeing of students during this time as students might be annoyed or frustrated in quarantine because they are unable to meet friends or not accustomed to this method of online studying. A study conducted on university students, indicated that in an academic setting student experiencing higher level of stress and discomfort along with low sense of academic control experience lower sense of well-being (Gavala & Flett, 2005). Similarly, students amid pandemic might be experiencing low sense of academic control due to shift in mode of education from traditional to online teaching leading to demotivation, stress, and lower well-being. Therefore, there is a need to cater amotivation of students in contrast to other positive variables such as intrinsic or extrinsic motivation through various practical interventions (Adnan & Anwar, 2020; Simon & Seth, 2019). As intrinsically motivated behaviors (to know) are already considered to be associated with lower levels of stress (Baker, 2004).

Research indicates students that are intrinsically motivated in academics are psychologically sound as academic engagement influences their learning outcomes leading to various psychological benefits e.g., enhanced persistence, happiness, and pro-social behaviour. (Bhat & Naik, 2016). In addition, intrinsically motivated (to know) behaviors cause decrease in stress (Baker, 2004).

Emadpoor, Lavasani, & Shahcheraghi (2016) in their study identified the mediating role of academic motivation in psychological wellbeing as in this study. Besides, when students are internally regulated and determined through positive feedback, support, threats, punishment, or surveillance their wellbeing increases (Vallerand, et al., 1992). Furthermore, extrinsic motivation has limited impact on psychological well-being because extrinsic motivation (emotional regulation) is a result of external sources i.e., rewards or constraints which are imposed by others (Ryan & Deci, 2000) as it does not contribute to the wellbeing. Moreover, absence of face to face interaction with teachers could affect their extrinsic motivation and later wellbeing of students.

Lastly, prior literature supports the current finding for amotivation, as in past studies, amotivation has shown to be negatively linked to well-being and negative experiences as amotivated people feel unable to change their situation (Ryan & Deci, 2000).

## Conclusion



As per this study, correlations between academic motivation with psychological wellbeing are weak whereas academic motivation is found to be a significant predictor of psychological well-being of university students amid pandemic; specially its sub-facets intrinsic motivation and amotivation.

### References

- Adnan, M., & Anwar, K. (2020). Online learning amid the COVID-19 pandemic: Students' perspectives. *Journal of Pedagogical Sociology & Psychology*, 2(1). doi:10.33902/JPSP.%202020261309
- 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. <https://doi.org/10.1007/s12144-004-1019-9>
- Bhat, R. H., & Naik, A. R. (2016). Relationship of academic Intrinsic motivation and psychological well-being among students. *International Journal Of Modern Social Sciences*, 5(1), 66-74.
- Bolger, N., Zuckerman, A., & Kessler, R. C. (2000). Invisible support and adjustment to stress. *Journal of Personality & Social Psychology*, 79(6), 953–961. <https://doi.org/10.1037/0022-3514.79.6.953>
- Crawford, J., Butler-Henderson, K., Rudolph, J., & Glowatz, M. (2020). COVID-19: 20 countries' higher education intra-period digital pedagogy responses. *Journal of Applied Teaching & Learning*, 3(1)1-20. doi: 10.37074/jalt.2020.3.1.7.
- Dempsey, J. V., & Van Eck, R. N. (2002). Instructional design on-line: Evolving expectations. *Trends & Issues in Instructional Design & Technology*, 281-294.
- Emadpoor, L., Lavasani, M. G., & Shahcheraghi, S. M. (2016). Relationship between perceived social support and psychological well-being among students based on mediating role of academic motivation. *International Journal of Mental Health & Addiction*, 14(3), 284-290. doi:10.1007/s11469-015-9608-4
- Frenette, M. (2007). Why are youth from lower-income families less likely to attend university? evidence from academic abilities, parental influences, and financial constraints. *Analytical Studies Branch Research Paper Series*(295). <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.483.6172&rep=rep1&type=pdf>
- Frenette, M., Frank, K., & Deng, Z. (2020). School closures and the online preparedness of children during the COVID-19 pandemic. *Economic Insights*, 2020001(103). <https://files.eric.ed.gov/fulltext/ED605398.pdf>
- Gavala, J. R., & Flett, R. (2005). Influential factors moderating academic enjoyment/motivation and psychological well-being for Maori university students at Massey University. *New Zealand Journal of Psychology*, 34(1), 52-57. [https://mro.massey.ac.nz/bitstream/handle/10179/5692/Influential%20Factors%20\\_%20Gavala%20and%20Flett%202005.pdf](https://mro.massey.ac.nz/bitstream/handle/10179/5692/Influential%20Factors%20_%20Gavala%20and%20Flett%202005.pdf)

- Hara, N., & Kling, R. (1999). Students' frustrations with a Web-based distance education course. *First Monday*, 4(12). <https://firstmonday.org/ojs/index.php/fm/article/download/710/620?inline=1>
- Kállay, É., & Rus, C. (2014). Psychometric properties of the 44-item version of Ryff's Psychological Well-Being Scale. *European Journal of Psychological Assessment*, 30(1), 15-21. doi:10.1027/1015-5759/a000163
- Kaur, G. (2020). Digital Life: Boon or bane in teaching sector on COVID-19. . *CLIO an Annual Interdisciplinary Journal of History*, 6(6), 416-427.
- Liguori, E., & Winkler, C. (2020). From offline to online Challenges and opportunities for entrepreneurship education following the COVID-19 pandemic. *Entrepreneurship Education & Pedagogy*, 3(4), 346-351. <https://doi.org/10.1177/2515127420916738>
- Mailizar, Almanthari, A., Maulina, S., & Bruce, S. (2020). Secondary school mathematics teachers' views on e-learning implementation barriers during the Covid-19 pandemic: The case of Indonesia. *Eurasia Journal of Mathematics, Science and Technology Education*, 16(7), em1860. <https://doi.org/10.29333/ejmste/8240>
- Marelli, S., Castelnuovo, A., Somma, A., Castronovo, V., Mombelli, S., Bottoni, D., ... & Ferini-Strambi, L. (2021). Impact of COVID-19 lockdown on sleep quality in university students and administration staff. *Journal of Neurology*, 268(1), 8-15. <https://doi.org/10.1007/s00415-020-10056-6>
- McPherson, M. S., & Bacow, L. S. (2015). Online higher education: Beyond the hype cycle. *The Journal of Economic Perspectives*, 29(4), 135–153. doi:=10.1257/jep.29.4.135
- Molise, H., & Dube, B. (2020). Emergency online teaching in economic and management sciences necessitated by the COVID-19 pandemic: The need for healthy relations in a rural schooling context. *International Journal of Learning, Teaching & Educational Research*, 19(6), 387-400. doi:10.26803/ijlter.19.6.23
- Mullen, G. E., & Tallent-Runnels, M. (2006). Student outcomes and perceptions of instructors' demands and support in online and traditional classrooms. *Internet & Higher Education*, 9(4), 257–266. <https://doi.org/10.1016/j.iheduc.2006.08.005>
- Petrides, L. A. (2002). Web-based technologies for distributed (or distance) learning: Creating learning-centered educational experiences in the higher education classroom. *International Journal of Instructional Media*, 29(1), 69-77. <https://www.proquest.com/openview/3e7dda8d5bd2420d180d808fe176d8e0/1?pq-origsite=gscholar&cbl=30932>
- Roberts, R., J. Golding, T. Towell, S. Reid, S. Woodford, A. Vetere, & I. Weinreb. (2000). Mental and physical health in students: The role of economic circumstances. *British Journal of Health Psychology*, 5, 289–97. <https://doi.org/10.1348/135910700168928>
- Rosal, M. C., Ockene, I. S., Ockene, J. K., Barrett, S. V., Ma, Y., & Hebert, J. R. (1997). A longitudinal study of students' depression at one medical school. *Academic Medicine*, 72, 542-546. doi: 10.1097/00001888-199706000-00022

- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic Definitions and new directions. *Contemporary Educational Psychology*, 25, 54-67. doi:10.1006/ceps.1999.1020
- Ryan, R. M., & Deci, E. L. (2000a). When rewards compete with nature: The understanding of intrinsic motivation and self re-evaluation. In *Intrinsic and extrinsic motivation* (pp. 13-54). Academic Press. <https://doi.org/10.1016/B978-012619070-0/50024-6>
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality & Social Psychology*, 57(6), 1069-1081. <https://psycnet.apa.org/buy/1990-12288-001>
- Sahu, P. (2020). Closure of universities due to coronavirus disease 2019 (COVID-19): Impact on education and mental health of students and academic staff. *Cureus*, 12(4). doi:10.7759%2Fcureus.7541
- Schrum, L. M. (2000). Guarding the promise of online learning. *The Education Digest*, 66(4), 43-47. <https://www.proquest.com/openview/4c541c361e6acaf77dcaaf26f558b77a/1.pdf?pq-origsite=gscholar&cbl=25066>
- Shahzad, S. K., Hussain, J., Sadaf, N., Sarwat, S., Ghani, U., & Saleem, R. (2020). Impact of virtual teaching on esl learners' attitudes under Covid-19 circumstances at post graduate level in Pakistan. *English Language Teaching*, 13(9), 1-9. <https://eric.ed.gov/?id=EJ1266603>
- Simon, O., & Seth, J. S. (2019). Academic motivation, life exploration, and psychological well-being among emerging adults in Denmark. *Nordic Psychology*, 72(3), 199-221. doi:10.1080/19012276.2019.1675088
- Sintema, E. J. (2020). Effect of COVID-19 on the performance of grade 12 students: Implications for STEM education. *EURASIA Journal of Mathematics, Science & Technology Education*, 16(7), em1851. doi:10.29333/ejmste/7893
- Toquero, C. M. (2020). Challenges and opportunities for higher education amid the COVID-19 pandemic: The Philippine context. *Pedagogical Research*, 5(4), em0063. <https://eric.ed.gov/?id=EJ1263557>
- Vallerand, R. J., Pelletier, L. G., Blais, M. R., Briere, N. M., Senecal, C., & Vallieres, E. F. (1992). The academic motivation scale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational & Psychological Measurement*, 52(4), 1003-1017. <https://doi.org/10.1177/0013164492052004025>
- WHO. (2020). *Coronavirus disease (COVID-19) pandemic*. Retrieved from <https://www.who.int/>
- Zaharah, Z., & Kirilova, G. I. (2020). Impact of Corona virus outbreak towards teaching and learning activities in Indonesia. *SALAM: Jurnal Sosial dan Budaya Syar-i*, 7(3). doi:10.15408/sjsbs.v7i3.15104