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Volume 17, Number 1, January 2016

Special Issue: Research Papers in Online Learning Performance and Behaviour

URI: <https://id.erudit.org/iderudit/1066273ar>
DOI: <https://doi.org/10.19173/irrodl.v17i1.2149>

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Publisher(s)

Athabasca University Press (AU Press)

ISSN

1492-3831 (digital)

[Explore this journal](#)

Cite this article

Buzdar, M., Ali, A. & Tariq, R. (2016). Emotional Intelligence as a Determinant of Readiness for Online Learning. *International Review of Research in Open and Distributed Learning*, 17(1), 148–158. <https://doi.org/10.19173/irrodl.v17i1.2149>

Article abstract

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January – 2016

Emotional Intelligence as a Determinant of Readiness for Online Learning



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Abstract

Students' performance in online learning environments is associated with their readiness to adopt a digital learning approach. Traditional concept of readiness for online learning is connected with students' competencies of using technology for learning purposes. We in this research, however, investigated psychometric aspects of students' preparedness for online learning. Purpose of the activity was to examine students' emotional intelligence as a determinant of their readiness for online learning. 432 learners enrolled in distance learning programs participated in the study. Wong and Law emotional intelligence scale (WLEIS) and online learning readiness scale (OLRS) were adapted to collect the required data. Regression coefficient portrays a large predictive contribution of students' emotional intelligence in explaining variance in their readiness for e-learning.

Keywords: Motivation; Self-efficacy; Computer/Internet; Achievements

Introduction

Online learning has emerged as a reliable alternative to face to face educational experiences. Flexibility, student-centeredness and technological enrichment have magnetized online

education, which is now attracting large numbers of fulltime and part-time learners (Jordan, 2014). This expansion, on the other hand, is creating enormous technical and non-technical problems for its effective functioning such as complications in pedagogical deliveries and lessened engagement of learners in teaching-learning procedures. These difficulties are adversely affecting the quality of learning in online frameworks (Parker, 2008). Major issues of online education can be divided in two major categories: X and Y. One kind of problem is universal and widespread in nature (Gaoming, Yong, & Ning, 2012). International collaboration among different online education providers and quality of instructions and instructional materials, for instance, may be included in this category. The problems under the second category are generally context-driven and yield from variances in internal and external circumstances in which online education institutions operate (Hailey, Grant-Davie, & Hult, 2001; Kanwal & Rehman, 2014; Nawaz, 2012). Local managerial complexities and competencies of available online instructors may fall into this category.

Rapid expansion of e-learning and its enhanced attractiveness for learners have raised concerns at local and international levels about the quality of education, technological infrastructure, and performance of teachers and students in online environments. Students' preparedness to execute within a digitally-enriched educational context is important to reduce these concerns. We, in this research, investigated psychometric determinants of students' preparedness for online learning. Traditionally, students' readiness for e-learning is viewed as connected with their capabilities to use technology for academic purposes. Warner, Christie, and Choy (1998) defined readiness for online learning as a combination of students' preferences for online delivery, their competence and confidence in using electronic communication, and their ability to engage in autonomous learning. Lynch (2001) and Smith, Murphy, and Mahoney (2003) equate readiness for online learning with "comfort with e-learning" and "self-management of learning." Smith (2005) accepted the application of these aspects of students' readiness to research and practice in the areas of student dispositions associated with online learning.

We, however, relied on a reconceptualized concept of online learning readiness presented by Hung, Chou, Chen, and Own (2010) for this study. This concept claims that besides the computer/internet and online communication self-efficacies, students' readiness for e-learning is depicted in their potential for self-directed learning, learner control, and motivation for learning. Association of self-directedness, motivation, control, and self-efficacy with readiness for online learning in emerging concepts has brought the issue into a psychological paradigm, thus opening possibilities for psychometric inquiries in this field. It is observed that students' readiness for online education fluctuates in varied circumstances. Responding to this phenomenon, researchers have focused on identifying technical and non-technical factors that have the potential to increase students' readiness for opting to enroll in online courses as well as strengthen their achievements through this learning approach (Çiftci, Güneş, & Üstündağ, 2010; Masiello, Ramberg, & Lonka, 2005; Valtonen, Kukkonen, Dillon, & Väisänen, 2009). We, in this research, concentrated on discovering the contributory role of emotional intelligence, a major psychometric ability, in explaining learners' readiness for online education.

Leading emotional intelligence theories involve varied conceptions of identification and regulation of human sentiments (Neophytou, 2013). Models by Goleman (2009) and Bar-On (1997) conceptualize emotional intelligence as a set of emotional and social competencies that affects behaviors and performances of people. The Mayer-Salovey model, on the other hand, defines emotional intelligence as a person's ability to perceive, understand, manage and use emotions to facilitate thinking and decisions (Mayer, Salovey, & Caruso, 2008). Emotional intelligence, under these varying concepts, motivates and stimulates people through regulating and managing emotions. Hypothesized relationships among psychological aspects of students' readiness for online learning (i.e., self-directed learning, motivation for learning, learner control, and computer and internet self-efficacy) and psychometric abilities of emotional intelligence provided theoretical foundations for this research and convinced us to scientifically trace out causal associations among different traits of emotional intelligence and psychological indicators of students' readiness for online learning.

The Current Study

Students' performance in online learning environments depends on their willingness to pursue education in digital and technologically-rich educational contexts. Concentrating on motivational and psychometric qualities of the students, this research investigated the contribution of emotional intelligence in shaping their readiness for online education. Students enrolled in distance education programs of a prominent Pakistani open university participated in the study. The purpose of this research was to investigate students' level of preparedness for adopting online education programs in the future and trace out the role of emotional intelligence in strengthening their beliefs and readiness for this purpose. The current study attempted to answer the following research questions:

1. To what extent are students included in the sample ready for adopting online learning programs?
2. To what extent does the emotional intelligence of students included in the sample predict their readiness for online learning?

Research Methodology

The current study is based on the concepts of readiness for online learning presented by Hung et al. (2010) and emotional intelligence postulated by Wong and Law (2002). We used survey method to gauge students' emotional intelligence and their preparedness for online learning. Hung et al. developed the online learning readiness scale (OLRS), which was validated using Taiwanese college students. Subscales of OLRS (i.e., computer/internet self-efficacy (CIS), self-

directed learning (SDL), learner control (LC), motivation for learning (MFL), and online communication self-efficacy (OCS)) demonstrated composite reliabilities of .74, .87, .73, .84 and .87 respectively in the Hung et al. study. The OLRs is frequently used in different online learning contexts to gauge students' readiness for e-learning (Cidgem & Yildirim, 2014; Kaymak & Horzum, 2013; Kirmizi, 2015). Wong and Law (2002) developed an emotional intelligence scale that was also validated on different samples (Bao, Xue, & Kong, 2015; Shi & Wang, 2007; Song, et al., 2010). Wong and Law (2002) reported alpha coefficients of .87, .83, .84, and .90 for the subscales of self-emotions appraisal (SEA), others-emotions appraisal (OEA), use of emotions (UOE), and regulation of emotions (ROE) respectively. Both instruments were originally developed using Likert five-point scales. We adapted the scales for our study simplifying their languages for better understanding of non-native English speakers. We selected three Professors and two Associate Professors of Education with specialization in Educational Psychology serving in three prominent universities of Pakistan and requested them to check face and content validity of the adapted tools. Comments of the experts were encouraging and helped in finalizing the tools. As a second check, we administered the instruments to 50 master-level students enrolled in a postgraduate institution for pilot testing. The respondents were asked to indicate any problem they faced in reading, understanding and completing the opinionnaire. Generally, students found the instruments easy and understandable. We finalized the research instrument according to the instructions of the experts and results of pilot testing. Both scales and subscales demonstrated the Cronbach's Alpha values of more than .80 in final study.

The 432 master level students enrolled in Allama Iqbal Open University (AIOU) Islamabad, Pakistan participated in the study. We targeted the two regional campuses of AIOU for selecting the sample in the spring 2014 semester. Data of students enrolled in third and fourth semesters of their two-year master level programs of social sciences as well as arts and humanities were gathered from the campuses. 1250 and 1345 students were enrolled in the third and fourth semesters of their Master programs in the two campuses respectively. 250 students from each campus were randomly selected for data collection using a random number table. We approached these 500 randomly-selected students and requested them to fill the research tools. 432 respondents returned the filled instruments. The return rate was 86.4%. Collected data were recorded in an SPSS file and analyzed to answer the research questions.

Findings

Data were collected converting both tools on 5-point Likert type scales. Mean scores against three subscales of the OLRs (i.e., computer/internet self-efficacy ($M = 1.76$), learner control ($M = 2.55$) and online communication self-efficacy ($M = 2.27$)) demonstrated discouraging trends for online learning among the students whereas two subscales including self-directed learning ($M = 3.24$) and motivation for learning ($M = 3.31$) support the respondents' tendency for online learning (Table 1). Overall readiness for online learning among the distance learners according to their

perception is below average with $M = 2.73$ on the 5-point scale (Table 1). In the preliminary section of the research tool, the respondents were asked about their willingness to adopt online learning. It is encouraging that despite their low readiness, a majority of the distance learners sampled (72%) show their willingness to adopt an online mode of learning.

Table 1

Mean scores representing students' opinions against different subscales of emotional intelligence and online learning readiness scale

Scale	Subscale	Mean	SD
Emotional Intelligence Scale	Self-emotions appraisal (SEA)	3.18	.561
	Others-emotions appraisal (OEA)	2.62	.854
	Use of emotions (UOE)	2.97	.693
	Regulation of emotions (ROE)	2.68	.906
Emotional Intelligence Scale		2.86	.553
Online Learning Readiness Scale	Computer/internet self-efficacy (CIS)	1.76	1.167
	Self-directed learning (SDL)	3.24	.621
	Learner control (in an online context) (LC)	2.55	.861
	Motivation for (online) learning (MFL)	3.31	.557
	Online communication self-efficacy (OCS)	2.27	.882
Online Learning Readiness Scale		2.73	.562

The students' responses on the Wong and Law emotional intelligence scale manifested a lower level of emotional intelligence among the respondents ($M = 2.86$ on 5-point scale). The sampled students demonstrated below average abilities of others-emotions appraisal (OEA; $M = 2.62$), use of emotions (UOE; $M = 2.92$) and regulation of emotions (ROE; $M = 2.68$), except in the regulation of emotions (ROE) with a mean score of 3.18 on the 5-point scale (Table 1). Apparently, data show a low presence of emotional intelligence and readiness for online learning among the sample.

Table 2

Pearson correlation coefficients revealing relationships among different aspects of emotional intelligence and students' readiness for online learning

	SEA	OEA	UOE	ROE	EI
CIS	.168**	.076	.156*	.083	.155*
SDL	.416**	.398**	.510**	.450**	.603**
LC	.458**	.245**	.265**	.211**	.380**

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MFL	.373**	.349**	.338**	.277**	.449**
OCS	.333**	.212**	.234**	.220**	.330**
OLR	.472**	.344**	.414**	.339**	.521**

**Correlation is significant at the 0.01 level; *Correlation is significant at the 0.05 level.

Note: SEA = Self-emotions appraisal; OEA = Others-emotions appraisal; UOE = Use of emotion; ROE = Regulation of emotion; EI = Emotional intelligence; CIS = Computer/internet self-efficacy; SDL = Self-directed learning; LC = Learner control (in an online context); MFL = Motivation for (online) learning; OCS = Online communication self-efficacy; OLR = Online learning readiness

Inferential statistics demonstrate significant, positive and comparatively high values of Pearson correlation coefficients among major constructs of emotional intelligence and students' readiness for online learning. Only two correlations of computer/internet self-efficacy (CIS) with others-emotions appraisal (OEA) and role of emotions (ROE) are insignificant in the matrix presented in Table 2. Accumulative emotional intelligence has a stronger correlation with online learning readiness with the correlation coefficient value of .521 that is significant at the 0.01 level. Robust findings of correlation analysis convinced us to run multiple and logistic regression analyses to trace out predictors of students' readiness for online learning.

Table 3

Results of multiple regression analysis with self-emotions appraisal (SEA), others-emotions appraisal (OEA), use of emotion (UOE) and regulation of emotion (ROE) as predictor variables and online learning readiness (OLR) as criterion variable

Predictors	\square (standard)	t-value	p
Self-emotions appraisal (SEA)	.310	6.523	.000
Others-emotions appraisal (OEA)	.122	2.675	.008
Use of emotion (UOE)	.222	4.555	.000
Regulation of emotion (ROE)	.072	1.475	.141

Adjusted R² = .298, F(4, 427) = 46.658*

*p<.001

Significant value of F(4, 427) = 46.658 verify the model of multiple regression run to estimate predictability of emotional intelligence indicators for the students' online learning readiness (Table 3). The regression model demonstrates that four aspects of emotional intelligence (i.e., self-emotions appraisal (SEA), others-emotions appraisal (OEA), use of emotion (UOE) and regulation of emotion (ROE)) collectively explain 29.8% of variance in the students' readiness for online learning. This effect size is large according to Cohen's classification of effect size (Cohen, 1992). Three aspects of emotional intelligence (i.e., self-emotions appraisal (SEA), others-

emotions appraisal (OEA) and use of emotions (UOE)) respectively explain 12.2%, 31%, and 22% of variance in the students' readiness for online learning (see values of η^2 (standard) in Table 3).

Discussion

The idea of investigating the relationship of emotional intelligence with different academic parameters is relatively new in educational circles. The classical concept of readiness for online learning connected with competencies of using technology has confined the scientific endeavors to investigating psychomotor aspects of students' preparedness for e-learning. In this research we went beyond the traditional concepts of readiness for online learning and explored psychometric aspects of students' readiness for e-learning. The major purpose of this activity was to determine the contributory role of emotional intelligence in explaining variances in students' readiness for online learning.

We examined four aspects of students' readiness for e-learning and found that the students had comparatively stronger preparedness in motivation for learning and self-directed learning. The students reported almost average ability of learners' control in an online context; however, online communication and computer/internet self-efficacies were comparatively lower among the sample. These results are different from the findings of Hung et al. (2010) who identified that Taiwanese students' levels of online readiness were higher in online communication and computer/Internet self-efficacies but were low in learner control and self-directed learning. Only motivation for learning was found higher in the both samples. Contrasts between the levels of readiness for online learning among the two samples reflect differences among their digital competencies and psychological soundness. Since the Pakistani respondents were not involved in online learning practices, the low levels of their online communication and computer/internet self-efficacies were understandable. This phenomenon is also consistent with the findings of Valtonen et al. (2009) who investigated readiness for online learning of Finnish students with no experience of e-learning. It is observed that Pakistani and Finnish students has comparatively lower online communication and internet self-efficacies than Taiwanese students who had experienced online learning. Accumulative means of the five indicators of readiness demonstrates comparatively-reduced preparedness of Pakistani students for e-learning. This compelled us to further explore the data, finding its roots in psychometric characteristics of the students.

One prominent aspect of students' psychometric traits is their emotional intelligence that is regarded as a significant predictor of students' learning achievements in formal and non-formal educational contexts (Berenson, Boyles, & Weaver, 2008). Association between emotional intelligence and learning styles is also established in previous research (Aliakbari & Abol-Nejadian, 2013). Cleveland-Innes and Campbell (2012) discovered the presence of emotions as a fundamental component in online learning contexts. In the present research, concomitance between comparatively deteriorate readiness for online learning and low abilities of emotional

intelligence has established the role of emotional intelligence in the students' readiness for online learning. Statistically all major aspects of emotional intelligence and students' readiness for online learning are significantly and positively correlated (Table 2). Standardized beta coefficients demonstrate that one unit increase in self-emotions appraisal (SEA), others-emotions appraisal (OEA), and use of emotion (UOE) will cause .310, .122, and .222 units increase, respectively, in the students' readiness for online learning. Multiple regression analysis revealed that emotional intelligence explained 29.8% of the variance in the students' readiness for online learning. We know that emotional traits like self and others' emotions appraisals, and use and regularization of emotions can be nurtured through pedagogical practices (Abdolrezapour & Tavakoli, 2011; Chung & McBride, 2015). Various instructional approaches are suitable for students' social and emotional learning, which concentrates on developing awareness of emotions with their strengths and weaknesses, and skills of expressing feelings constructively (Bar-On, Maree, & Elias, 2007; Elias, 1997). Findings of this study have enhanced our understanding about the instrumental uses of emotional learning to promote students' readiness for online learning. We postulate that students' readiness and performance in online learning can be strengthened through regularizing their sentiments and raising emotional intelligence. Numerous interventions for students' emotional learning are suggested in the literature (Merrell & Gueldner, 2010). Further research can evaluate effectiveness of these interventions in varied social, cultural, and economic contexts.

Conclusions

The study concludes that students included in the sample are not confidently prepared and ready to adopt online learning. Among the five indicators of students' readiness for online learning, the respondents demonstrated comparatively higher readiness in two: self-directed learning and motivation for (online) learning. The students reveal their lesser preparation in the indicators of computer/internet self-efficacy, learner control (in an online context), and online communication self-efficacy. Accumulative statistical results against the online learning readiness scale (OLRS) also verify lower preparedness of sampled students for online learning in the Pakistani context. A major research question of the current inquiry was to what extent the emotional intelligence of students included in the sample predicts their readiness for online learning. The Wong and Law emotional intelligence scale (WLEIS) measures four aspects of emotional intelligence. Values of Pearson correlation coefficients demonstrate that the students' readiness for online learning has significant and direct associations with their emotional intelligence and its four indicators (i.e., self-emotions appraisal (SEA), others-emotions appraisal (OEA), use of emotions (UOE), and regulation of emotions (ROE)). Through multiple regression analysis, we concluded that emotional intelligence has large significant effects on the students' readiness for online learning. The emotional intelligence of the students included in the sample explains a major part of the variance (29.1%) in their readiness for online learning. The research opens possibilities of adopting pedagogical strategies that foster emotional intelligence and other psychometric abilities of the students for the purpose of improving their readiness for online learning. We recommend

further research to develop instructional strategies that promote emotional intelligence of the students with an intention to enhance their readiness and performance in online learning environments.

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