

**USE OF SOCIAL MEDIA, STUDENT ENGAGEMENT, AND  
ACADEMIC PERFORMANCE OF BUSINESS STUDENTS  
AT UNIVERSITI UTARA MALAYSIA**

**BY**

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## ABSTRACT

Social media is considered an important phenomenon in today's generation and is more popular among youngsters in many nations. This study aims to investigate the effect of social media on academic performance of students of College of Business at Universiti Utara Malaysia through the mediation of student engagement using self-determination theory. A total number of 227 students were randomly chosen to participate in this study. Questionnaire was used as the main data collection technique, which was personally administered during class sessions. Structural equation modelling-partial least square (SEM-PLS) was used as the main data analysis to test the research hypotheses. Result showed no direct relationship between social media and academic performance, but the effect was mediated by agentic engagement and behavioural engagement. The result suggests that social media has the potential to be used in a learning environment as it promotes engagement of student in class and subsequently their academic performance and success. Recommendations for future research and limitations of the study are also highlighted.

**Key words:** social media, academic performance, student engagement, self-determination theory, university students

## ABSTRAK

Media sosial dianggap satu fenomena penting dalam generasi hari ini dan lebih popular dalam kalangan anak-anak muda di banyak negara. Kajian ini bertujuan untuk mengkaji kesan media sosial terhadap prestasi akademik pelajar Kolej Perniagaan Universiti Utara Malaysia melalui perantaraan penglibatan pelajar dengan menggunakan teori penentuan nasib sendiri. Seramai 227 pelajar telah dipilih secara rawak untuk mengambil bahagian dalam kajian ini. Soal selidik telah digunakan sebagai teknik pengumpulan data utama, yang telah ditadbir sendiri semasa sesi kelas. *Structural equation modelling-partial least square* (SEM-PLS) telah digunakan sebagai analisis data utama untuk menguji hipotesis kajian. Keputusan menunjukkan tiada hubungan langsung antara media sosial dan pencapaian akademik, tetapi kesannya diperantara oleh penglibatan agentik dan penglibatan tingkah laku. Hasil kajian menunjukkan bahawa media sosial mempunyai potensi untuk digunakan dalam persekitaran pembelajaran yang kerana ia menggalakkan penglibatan pelajar di dalam kelas dan seterusnya pencapaian dan kejayaan akademik. Cadangan untuk kajian dan batasan kajian masa hadapan adalah juga diserlahkan.

**Kata kunci:** media sosial, pencapaian akademik, penglibatan pelajar, teori penentuan nasib sendiri, pelajar universiti

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ  
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Mohammad Sa'id Alshuaibi  
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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Introduction**

The evolution of the Internet has helped empower users in a wide variety of ways. One of the more interesting transformations occurring in higher education is the use of existing technologies to help advance educational concepts and connect with students in new and meaningful ways (Bergen, 2000). Social media is a huge part of this technology use. The integration of social media within the education sphere is made easier because nowadays college students tend to have an account on many social media sites. For instance, a new survey conducted by the Pew Research Centre on American adults who use the Internet found that 53 percent of young adults ages 18-29 uses Instagram and overall Facebook remains the most popular social media site (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015). The survey also reported that 58 percent of them had Facebook, 23 percent used LinkedIn, 22 percent used Pinterest, 21 percent used Instagram, and 19 percent Twitter.

The proliferation of online social media has undoubtedly affected how students nowadays learn. Twenty first century learners, often considered critically engaged learners, are the technologically savvy students in today's classrooms (Moore et al., 2008). They tend to have access to technology at home, including MP3 players, cell phones, personal computers, and other multi-media devices. They also tend to be plugged into social media sites such as Facebook, Twitter, Instagram, Pinterest, YouTube and many more throughout the course of their everyday activities (Rhoades, Friedel, & Irani, 2008). In this manner,

The contents of  
the thesis is for  
internal user  
only

## References

- Ahmed, I., & Qazi, T. F., (2011). A look out for academic impacts of Social networking sites (SNSs): A student based perspective. *African Journal of Business Management*, 5, 5022–5031.
- Ainin, A., Naqshbandi. M. M., Moghavvemi, S., & Jaafar, N. I. (2015). Facebook usage, socialization and academic performance. *Computers & Education*, 83, 64–73.
- Akyıldız, M., & Argan, M. (2012). Using online social networking: Students' purposes of Facebook usage at the University of Turkey. *Journal of Technology Research*, 3. Retrieved from: <http://www.aabri.com/manuscripts/111085.pdf>
- Al-rahmi, W. M., Othman, M. S., Yusof, L. M., & Musa, M. A. (2015). Using social media as a tool for improving academic performance through collaborative learning in Malaysian higher education. *Review of European Studies*, 7(3), 265–275.
- Alwagait, E., Shahzad, B., & Alim, S. (2014, in press). Impact of social media usage on students' academic performance in Saudi Arabia. *Computers in Human Behavior*. <http://dx.doi.org/10.1016/j.chb.2014.09.028>
- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, 14, 396–402.
- Aslanidou, S & Menexes, G. (2008). Youth and the Internet: Uses and practices in the house. *Computers & Education*, 3(5), 1375–1391.
- Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good, but relevance is excellent: autonomy-enhancing and suppressing teacher behaviors predicting students' engagement in schoolwork. *British Journal of Educational Psychology*, 72, 261–278.
- Bagozzi, R., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16, 74–94. doi: 10.1007/bf02723327
- Barbour, M. K., & Reeves, Thomas C. (2009). The reality of virtual schools: A review of the literature. *Computers and Education*, 52(2), 402–416.
- Barnett, V., & Lewis, T. (1994). *Outliers in statistical data*. New York: Wiley.
- Bartlett, J.E., Kotrlik, J.W., and Higgins, C.C. (2001). “Organizational Research: Determining Appropriate sample Size in Survey Research”. *Information Technology, Learning, and Performance Journal*, 19(1), pp 43-50 (spring).
- Batts, B. L. Jr. (2013). *An exploration of the relationship between social media use and engagement among African American student leaders*. Unpublished doctoral dissertation, Graduate College of Hampton University.
- Bergen, D. 2000. Linking technology and teaching practice. *Childhood Education*, 76(4), 252–253.

- Blumberg, B., Cooper, D.R. and Schindler, P.S. (2008) *Business Research Methods*. (International student ed.). Maidenhead: McGraw-Hill Education.
- Birnholtz, J., Hancock, J., & Retelny, D. (2013). Tweeting for class: Co-construction as a means for engaging students in lectures. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 797–800). New York, NY: ACM. doi: 10.1145/2470654.2470767
- Browning, L., Gerlich, R. N., & Westermann, L. (2011). The new HD classroom: A “Hyper Diverse” approach to engaging with students. *Journal of Instructional Pedagogies*, 5, 1–10.
- Burns, A., & Darling, N. (2002). Peer pressure is not peer influence. *The Education Digest*, 68, 4–6.
- Burrows, P. (2010). *An examination of the relationship among affective, cognitive, behavioral, and academic factors of student engagement of 9th grade students*. Unpublished doctoral dissertation, University of Oregon.
- Camilia, N. C., Ibrahim, S. D., & Dalhatu, B. L. (2013). The effect of social networking sites usage on the studies of Nigerian students. *The International Journal of Engineering and Science*, 2, 39–46.
- Chan, K., & Fang, W. (2007). Use of internet and traditional media among young people. *Young Consumers*, 8(4), 244-256.
- Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin*, 39(1), 3–7.
- Chickering, A.W., & Ehrmann, S.C. (1996). Implementing the seven principles: Technology as a lever. *AAHE Bulletin*, 49(2), 3–6.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295–336). Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information Systems Research*, 14, 189–217.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. R. Gunnar, & L. A. Sroufe (Eds.), *Self-processes in development: Minnesota symposium on child psychology*, (pp. 43–77, Vol. 23). Chicago: Chicago University Press.
- Cooper, C. R., & Schindler, P. S. (2008). *Business research methods* (10 ed.). Boston: McGraw-Hill.
- Curby, T., LoCasale-Crouch, J., Konold, T., Pianta, R., Howes, C., Burchinal, M., & Barbarin, O. (2009). The relations of observed pre-K classroom quality profiles to

- children's achievement and social competence. *Early Education and Development*, 20, 346–372.
- Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. doi:10.1037/1082-989X.1.1.16]. *J*, 16-29. doi: 10.1037/1082-989X.1.1.16
- DeAndrea, D. C., Ellison, N. B., LaRose, R., Steinfeld, C., & Fiore, A. (2012). Serious social media: On the use of social media for improving students' adjustment to college. *The Internet and Higher Education*, 15, 15–23.
- Deci, E. L., & Ryan, R. M. (2000a). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268.
- Deci, E. L., & Ryan, R. M. (2000b). What is the self in self-directed learning? Findings from recent motivational research. In G. Staka (Ed.), *Conceptions of self-directed learning: Theoretical and conceptual considerations*. Munster: Waxmann.
- Digital, Social and Mobile (2015). <http://wearesocial.net/blog/2015/01/digital-social-mobile-worldwide-2015/>
- Duarte P, Raposo M (2010) A PLS model to study brand preference: an application to the mobile phone market. In: EspositoVinzi V, Chin WW, Henseler J, Wang H (eds) *Handbook of partial least squares: concepts, methods and applications*. Springer, Heidelberg, pp 449 485.
- Duggan, M., Ellison, N. B., Lampe, C., Lenhart, A., & Madden, M. (2015). *Social media update 2014*. Retrieved from: <http://www.pewinternet.org/2015/01/09/social-media-update-2014/>
- Dyson, B., Vickers, K., Turtle, J., Cowan, S., & Tassone, A. (2015). Evaluating the use of Facebook to increase student engagement and understanding in lecture-based classes. *Higher Education*, 69(2), 303–313.
- Eccles, J. S. (2004). Schools, academic motivation, and stage-environment fit. In R. M. Lerner, & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed.). (pp. 125–153) Hoboken, NJ: Wiley.
- Elliot, A. J., & Dweck, C. S. (Eds.). (2005). *Handbook of competence and motivation*. New York: Guilford.
- Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*. Akron, OH: University of Akron Press.
- Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London: Sage Publications.
- Fredericks, J. A., & McColskey, W. (2014). The measurement of student engagement: a comparative analysis of various methods and student self-report instruments. In S.L. Christenson et al. (Eds.), *Handbook of research on student engagement* (pp. 763–782). Doi: 10.1007/978-1-4614-2018-7\_37,
- Gay, L.R. dan Diehl, P.L. (1992), *Research Methods for Business and Management*, MacMillan Publishing Company, New York.

- Gerlach, R. W., Kowalski B. R., & Wo!d, H. Partial least squares path modelling with latent variables. *Analytica Chimica Ac/a*, 1979, 112, 417-42!
- Gomez, M. Roses, S., & Malaga, P. F. (2012). The academic use of social networks among university students. *Comunicar: Scientific Journal of Media Communication*, 19(38), 94–100.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River, New Jersey: Prentice Hall.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Thousand Oaks: Sage Publications.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). The use of partial least squares (PLS) to address marketing management topics: From the Special Issue Guest Editors. *Journal of Marketing Theory and Practice*, 18(2), 135–138.
- Hair, J. F., Sarstedt, M., Pieper, T. M., & Ringle, C. M. (2012a). The use of partial least squares structural equation modeling in strategic management research: A review of past practices and recommendations for future applications. *Long Range Planning*, 45(5–6), 320–340. doi: <http://dx.doi.org/10.1016/j.lrp.2012.09.008>
- Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012b). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40, 414–433.
- Hallfors, D., Vevea, J. L., Iritani, B., Cho, H., Khatapoush, S., & Saxe, L. (2002). Truancy, grade point average, and sexual activity: A meta-analysis of risk indicators for youth substance use. *Journal of School Health*, 72(5), 205–211.
- Hamat, A., Embi, M. A., & Abu Hassan, H. (2012). The use of social networking sites among Malaysian university students. *International Education Studies*, 5(3), 56–66.
- Hamidy, W. (2014). *A comparative study of the role of social media in the engagement of students in online courses*. Unpublished doctoral dissertation, Northcentral University, Arizona, USA.
- Hargittai, E., & Hsieh, Y-l. P. (2010). Predictors and consequences of differentiated practices on social network sites. *Information, Communication & Society*, 13(4), 515–536.
- Harris, C. W. (2012). The uses of Facebook technologies in hospitality curriculum on an experiential learning platform for a new generation of students. *Asia Pacific Journal of Marketing and Logistics*, 24(5), 805–825.
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76(4), 408–420. doi: 10.1080/03637750903310360



- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In R. R. Sinkovics & P. N. Ghauri (Eds.), *Advances in International Marketing* (Vol. 20, pp. 277–320). Bingley: Emerald.
- Hirsh, O. S. (2006). *The relationship of Twitter use to students' engagement and academic performance in online classes at an Urban Community College*. Unpublished doctoral dissertation, Walden University.
- Hussain, I. (2012). A study to evaluate the social media trends among university students. *Procedia-Social and Behavioral Sciences*, 64, 639–645.
- Junco, R. (2012). Too much face and not enough books: The relationship between multiple indices of Facebook use and academic performance. *Computers in Human Behavior*, 28(1), 187–198.
- Junco, R. (2015). Student class standing, Facebook use, and academic performance. *Journal of Applied Developmental Psychology*, 36, 18–29.
- Junco, R., Heiberger, G., & Loken, E. (2011). The effect of Twitter college student engagement and grades. *Journal of Computer Assisted Learning*, 27(2), 119–132. doi: 10.1111/j.1365-2729.2010.00387.x
- Junco, R., Elavsky, C. M., & Heiberger, G. (2013). Putting twitter to the test: Assessing outcomes for student collaboration, engagement and success. *British Journal of Educational Technology*, 44(2), 273–287. doi:10.1111/j.1467-8535.2012.01284.x
- Kanagavel, R., & Velayutham, C. (2010). Impact of Social Networking on College Students: A Comparative Study in India and the Netherlands. *International Journal of Virtual Communities and Social Networking (IJVCSN)*, 2(3), 55-67. doi:10.4018/jvcsn.2010070105
- Kasen, S., Cohen, P., & Brook, J. S. (1998). Adolescent school experiences and dropout, adolescent pregnancy, and young adult deviant behavior. *Journal of Adolescent Research*, 13, 49–72.
- Kirschner, P. A., & Karpinski, A. C. (2010). Facebook and academic performance. *Computers in Human Behavior*, 26, 1237–1245.
- Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*, 74, 262–273. doi: 10.1111/j.1746-1561.2004.tb08283.x
- Kolek, E. A., & Saunders, D. (2008). Online disclosure: An empirical examination of undergraduate Facebook profiles. *NASPA Journal*, 45(1), 1–25.
- Krejcie, R.V. & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607-610.
- Kuh, G. D. (2001). Assessing what really matters to student learning: Inside the National Survey of Student Engagement. *Change* 33(3), 10–17.
- Kuh G. D. (2009). What student affairs professionals need to know about student engagement? *Journal of College Student Development*, 50, 683–706.

- Kuh, G. D., Kinzie, J., Buckley, J., Bridges, B., & Hayek, J. C. (2007). Piecing together the student success puzzle: Research, propositions, and recommendations. *ASHE Higher Education Report*, 32(5). San Francisco: Jossey-Bass.
- Kuh, G. D., Cruce, T. M., Shoup, R., Kinzie, J., & Gonyea, R. M. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *The Journal of Higher Education*, 79(5), 540–563.
- Ladd, G. W., & Dinella, L. M. (2009). Continuity and change in early school engagement: predictive of children's achievement trajectories from first to eighth grade? *Journal of Educational Psychology*, 101(1), 190–206. [http:// dx.doi.org/10.1037/a0013153](http://dx.doi.org/10.1037/a0013153).
- Lambert, D. M., & Harrington, T. C. (1990). Measuring nonresponse bias in customer service mail surveys. *Journal of Business Logistics*, 11(2), 5–25.
- Lee, E. B. (2014). Facebook use and texting among African American and Hispanic teenagers: An implication for academic performance. *Journal of Black Studies*, 45(2), 83–101.
- Lee, J-S. (2014). The relationship between student engagement and academic performance: Is it a myth or reality? *The Journal of Educational Research*, 107(3), 177–185. doi: 10.1080/00220671.2013.807491
- Leng, G. S., Lada, S., Muhammad, M. Z., Ibrahim, A. A. H. A., & Amboala, T. (2011). An exploration of social networking sites (SNS) adoption in Malaysia using technology acceptance model (TAM), theory of planned behavior (TPB) and intrinsic motivation. *Journal of Internet Banking and Commerce*, 16(2), 1–26.
- Lent, R. W., Hackett, G., & Brown, S. D. (1999). A social cognitive view of school-to-work transition. *The Career Development Quarterly*, 47(4), 297–311.
- Lindberg, D., & Tavakoli, S. (2013). *Student's usage of social media as a supplement to their studies: A comparison between two universities in Sweden and Argentina*. Unpublished bachelor's thesis, Royal Institute of Technology, Stockholm, Sweden. Retrieved from: [http://www.csc.kth.se/utbildning/kandidatexjobb/medieteknik/2013/rapport/lindberg\\_deborah\\_OCH\\_tavakoli\\_shabnam\\_K13021.pdf](http://www.csc.kth.se/utbildning/kandidatexjobb/medieteknik/2013/rapport/lindberg_deborah_OCH_tavakoli_shabnam_K13021.pdf)
- Lofgren, E. A. (2014). *Social media and equine science: The effect of LinkedIn on class engagement of equine higher education students*. Unpublished master's thesis, Murray State University, Kentucky.
- Lohmoller JB (1989). Latent Variable Path Modeling with Partial Least Squares. Physica, Heidelberg.
- Lubis, S. H., Ridzuan, S., Ishak, I. Y., Othman, H. F., Mohammed, N., Hamid, Z. A., & Izham, M. (2012). The relationship between times spent on Facebook and cumulative grade point average (CGPA) among third year biomedical science students in Faculty Health Sciences, UKM. *Procedia-Social and Behavioral Sciences*, 60, 590–595.

- Moore, A. H., Fowler, S. B., Jesiek, B. K., Moore, J. F. & Watson, C. E. (2008). Learners 2.0? IT and 21st Century Learners in Higher Education (*Research Bulletin*, Issue 7). Boulder, CO: EDUCAUSE Center for Applied Research. Retrieved from: <http://www.educause.edu/ecar>.
- O'Brien, R. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity*, 41, 673–690. doi: 10.1007/s11135-006-9018-6
- Olson, D. (2011). *The relationship between community college student engagement and student usage of online social networking*. Unpublished doctoral dissertation, Northern Illinois University, USA.
- Ozer, I., Karpinski, A. C., & Kirschner, P. A. (2014). A cross-cultural qualitative examination of social-networking sites and academic performance. *Procedia-Social and Behavioral Sciences*, 112, 873–881.
- Prajapati, B., Dunne, M., & Armstrong, R. (2010). Sample size estimation and statistical power analysis. Ot Peer Reviewed.
- J. Pallant. SPSS Survival Manual, 3rd Edition, Crows West, New South Wales, 2007.
- Pan, Y.-J., & Lee, L.-S. (2011). Academic performance and perceived employability of graduate students in business and management: An analysis of Nationwide Graduate Destination Survey. *Procedia-Social and Behavioral Sciences*, 25, 91–103.
- Pasek, J., More, E., & Hargittai, E. (2009). *Facebook and academic performance: Reconciling a media sensation with data*. Retrieved from: <http://www.uic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2498/2181>
- Podsakoff, P., Mackenzie, S., Lee, J.-Y., & Podsakoff, N. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Podsakoff, P. M., Bommer, W. H., Podsakoff, N. P., & MacKenzie, S. B. (2006). Relationships between leader reward and punishment behavior and subordinate attitudes, perceptions, and behaviors: A meta-analytic review of existing and new research. *Organizational Behavior and Human Decision Processes*, 99(2), 113–142. doi: <http://dx.doi.org/10.1016/j.obhdp.2005.09.002>
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly*, 1, 107–142.
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569. doi: 10.1146/annurev-psych-120710-100452
- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12, 531-544. doi: 10.1177/014920638601200408

- Preacher, K. J., & Hayes, A. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879-891. doi: 10.3758/brm.40.3.879
- Reeve, J. (2014). A self-determination theory perspective on student engagement. In S. L. Christenson et al. (Eds.), *Handbook of research on student engagement* (pp. 149–172). doi: 10.1007/978-1-4614-2018-7\_7,
- Reeve, J., & Tseng, C-M. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology*, 36, 257–267. doi:10.1016/j.cedpsych.2011.05.002
- Rhoades, E., Friedel, C., & Irani, T. (2008). Classroom 2.0: Student's feelings on new technology in the classroom. *NACTA Journal*, 52(4), 32–38.
- Roscoe, J. T. (1975). *Fundamental research statistics for the behavioural sciences*. (2nd ed.) New York: Holt Rinehart & Winston.
- Rutherford, C. (2010). Using online social media to support preservice student engagement. *Journal of Online Learning and Teaching*, 6(4), 703. Retrieved from <http://search.proquest.com/docview/1497198138?accountid=27575>
- Ryan, A.M. (2000). Peer groups as a context for the socialization of adolescents' motivation, engagement, and achievement in school. *Educational Psychologist*, 35, 101–112.
- Ryan, R. M., Kuhl, J., & Deci, E. L. (1997). Nature and autonomy: Organizational view of social and neurobiological aspects of self-regulation in behavior and development. *Development and Psychopathology*, 9, 701–728.
- Safko, L. (2010). *The social media bible*. Hoboken, NJ: John Wiley & Sons.
- Salaway, G., Caruso, J.B. and Nelson, M.R. (2008) “The Educause Center for Applied Research (ECAR) Study of Undergraduate Students and Information Technology, 2008” Educause Center for Applied Research, 8, pp. 9,15,16,20,26,83,84,93
- Salvation, M., & Adzharuddin, N. A. (2014). The influence of social network sites (SNS) upon academic performance of Malaysian students. *International Journal of Humanities and Social Science*, 4(10), 131–137.
- Schvaneveldt, P., Miller, B., Lee, T., & Berry, E. (2001). Academic goals, achievement, and age at first sexual intercourse: Longitudinal, bidirectional influences. *Adolescence*, 36(144), 767–787.
- Sekaran, U. (2003). *Research methods for business* (4th ed.). Hoboken, NJ: John Wiley & Sons.
- Singleton, R. A., & Straits, B. C. (2005). *Approaches to social research* 4th ed.). New York: Oxford University Press.
- Skiera, B., Hinz, O., & Spann, M. (2015). Social media and academic performance: does the intensity of Facebook activity relate to good grades? *Schmalenbach Business Review*, 67, 54–72.

- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effect of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85, 571–581.
- Skinner, E. A., & Wellborn, J. G. (1994). Coping during childhood and adolescence: a motivational perspective. In D. Featherman, R. Lerner, & M. Perlmutter (Eds.), *Life-span development and behavior* (pp. 91–133, Vol. 12). Hillsdale, NJ: Erlbaum.
- Smith, J. E., & Tirumala, L. N. (2012). Twitter's effects on student learning and social presence perceptions. *Teaching Journalism and Mass Communication*, 2(1), 21–31.
- Stageman, A. (2011). *Consulting social media in the college transition process: Experiential accounts of the class of 2014*. Unpublished master's thesis, Marquette University.
- Stagno Z, M.C, (2010) Use of social media by future university students. Unpublished bachelor's thesis, University of Twente Enschede, The Netherlands. Retrieved from: [http://www.utwente.nl/mb/actuee/arch.ef/2010/final\\_report\\_Mark\\_Zick\\_stagno.pdf](http://www.utwente.nl/mb/actuee/arch.ef/2010/final_report_Mark_Zick_stagno.pdf).potential
- Stollak, M.J., Vandenberg, A., Burklund, A., & Weiss, S. (2011). Getting social: The impact of social networking usage on grades among college students. Proceedings from ASBBS Annual Conference, 18(1), 859-865. Retrieved from <http://www.asbbs.org/files/2011/ASBBS2011v1/PDF/S/StollakM.pdf>
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Allyn & Bacon/Pearson Education.
- Tariq, W., Mehboob, M., Asfandyar Khan, M., & Ullah, F. (2012). The impact of social media and social networks on education and students of Pakistan. *International Journal of Computer Science Issues*, 9(4), 407–410.
- Tur, G., & Marín, V. I. (2015). Enhancing learning with the social media: Student teachers' perceptions on Twitter in a debate activity. *New Approaches in Educational Research*, 4(1), 46–53. doi: 10.7821/naer.2015.1.102
- Veiga, F. H., Galvao, D., Almeida, A. et al. (2012). Student's engagement in school: A literature review. *Proceedings of ICERI2012 Conference*, 19th-21st November, Madrid, Spain.
- Yourstone, S., Kraye, H., & Albaum, G. (2008). Classroom questioning with immediate electronic response: Do clickers improve learning. *Decision Science Journal of Innovative Education*, 6(1), 75–88.
- Yu, A. Y., Tian, S. W., Vogel D., & Chi-Wai, K., R. (2010). Can learning be virtually boosted? An investigation of online social networking impacts. *Computers & Education*, 55(4) (2010), 1494–1503.