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Original Paper

Do Academically Marginal Students Benefit from Emotional and Blended Learning Support?

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Abstract

Engaging all students at the same pace of learning is impossible for educators, and many low academic achievers commonly have low self-perception, low motivation and a lack of self-regulation for academic study. This paper attempts to explore the academic performance problems faced by Generation Z in the bottom quartile studying service marketing and their successful transformation story for their study at a community college in Hong Kong. A series of learning design activities, such as weekly online exercises (self-evaluation), weekly online videos and eTutorials were arranged for the class. This paper examines how students with low academic achievement responded in activities. Data archived in the learning management system on how they participated in activities and academic data performed by these students in mid-term test, quiz grade and final examination were used for analysis. Apart from the outside classroom activities, the teacher carried out individual consultations to address individual needs and provided additional time and effort to motivate students to learn. They subsequently made significant improvements in their final examination and recorded high satisfaction about their performance.

Keywords

emotion, blended learning, Chinese students, Generation Z, marketing subject

1. Introduction

Generation Z (GenZ) are learners who were born after 1995 and who have never known a world without Internet access (Crappell, 2013; Schroer, 2008). They can spend up to twelve hours a day using various media, including television, music, computers, game consoles and watching videos on the Internet (Lai, Khaddage, & Knezek 2013; Margaryan, Littlejohn, & Vojt 2011; Rideout, Foehr, & Roberts, 2010). Many have experience of instant messaging, texting, MP3 players, iPods, tablets and smartphones for social and recreational purposes (Lai & Hong, 2015; Palley, 2012). They may spend much of their waking time with their devices (Hope, 2016). Many GenZ learners seek being different (Culén & Gasparini, 2012) and are ready to communicate with anyone not present in the same physical space through Facebook, Google Hangout, Skype and Facetime (Cross-Bystrum, 2010). They experience fear of missing out (FOMO) (Strong, 2016). They are seamlessly connected with friends, data and entertainment (Wiedmer, 2015). However, skills used in a social context in digital technologies, such as blogging, photo sharing and social networking do not mean that GenZ learners can transfer their skill sets to academic use (Cole, Napier, & Marcum, 2015; Lai & Hong, 2015; Margaryan, Littlejohn, & Vojt, 2011; Rickes, 2016). They tend to have short attention spans compared with millennials (Gibson, 2016).

Unsurprisingly, they feel overwhelmed with information, and are often not competent in evaluating it because of a lack of critical thinking skills (Lorenzo & Dziuban, 2006; Mohr, 2017), and some adolescents may become more impulsive in Hong Kong (Greydanus & Greydanus, 2012). Despite GenZ learners indicating the need for face-to-face instruction in the learning environment (Caruso & Salaway, 2008), educators may experience difficulties in engaging their attention in a classroom setting. In addition, they expect more hands-on learning experiences that are not restricted to regular lectures (Roberson, 2011). They prefer learning through an active approach (Wiedmer, 2015), and they can be content creators rather than content consumers (Cole, Napier, & Marcum, 2015).

Nevertheless, all educators share a common challenge: that there is a mixture of high and low academic achievers in every class of GenZ learners. High-achieving students show greater confidence in themselves, with stronger motivation and intention to exercise self-regulation towards challenging learning tasks, than low achieving students (McCoach & Siegle, 2001). Some high achievers adopt a variety of strategies that assist them, from memorization to connecting concepts visually, whereas some low achievers focus primarily on how to regurgitate facts (Ruban & Reis, 2006). This means that high achievers show the ability to demonstrate both retention, which requires short-term memory, and recall, which requires long-term memory, while low achievers depend on short-term memory (Gorjian, Moosavinia, Kavari, Asgari, & Hydarei, 2011). On the other hand, low achievers believe that they are born with low ability and fixed intelligence (Vispoel & Austin, 1995). They may spend time and effort in superficial information processes, focusing on isolated details and not being able to synthesize concepts (Butler & Neuman, 1995). Given that GenZ learners tend to favour multimodal stimuli in the

learning process, educators can consider designing various learning and assessment activities that fit GenZ characteristics and build reinforcement for both high and low achievers.

Educators can design a series of pedagogical actions so that the sequence of learning tasks enables learners to gain conceptual knowledge and professional skills in these activities (Lockyer, Heathcote, & Dawson, 2013). The intended outcomes can then be acquired through the assimilation of information, communication with their tutor and peers, the application of concepts in the real world or simulated settings, and a mixed mode of assessment, with a sequence of academic design decisions (Conole, 2009). A learning design taxonomy with seven learning descriptions, which is derived from the Open University Learning Design Initiative (Cross, Galley, Brasher, & Weller, 2012) include (1) assimilative activities; (2) finding and handling information activities; (3) communication activities; (4) productive activities; (5) experiential activities; (6) interactive/adaptive activities; and (7) assessment activities (Table 1) (Nguyen, Rienties, & Toetenel, 2017; Rienties & Toetenel, 2016). However, educators can consider some activities in the classroom and take advantage of the online environment so that GenZ students can carry out alternative tasks before and/or after class.

Table 1. Learning Design Taxonomy

	Type of activity	Example
Assimilative	Attending to information	Read, watch, listen, think about, access
Finding and handling information	Searching for and processing information	List, analyse, collate, plot, find, discover, access, use, gather
Communication	Discussing module-related content with peer or tutor	Communicate, debate, discuss, argue, share, report, collaborate, present, describe
Productive	Actively constructing an artifact	Create, build, make, design, construct, contribute, complete
Experiential	Applying learning in a real-world setting	Practise, apply, mimic, experience, explore, investigate
Interactive/ Adaptive	Applying learning in a simulated setting	Explore, experiment, trial, improve, model, simulate
Assessment	All forms of assessment	Write, present, report, demonstrate, critique

Source: Data Adapted from Cross, Galley, Brasher and Weller (2012)

2. Background of the Study

The paper examined students attending the course “Service Marketing” in a two-year Higher Diploma business program offered by a self-financed college in Hong Kong in 2017. The course aimed to enable students to acquire key knowledge and skills in service marketing so that they can provide quality

services in various service industries and manage to resolve problems, customer complaints and service recovery. The 13-week course comprised a two-hour lecture and a one-hour tutorial each week. Students were well informed about the assessment tasks, with 50% for continuous assessment and 50% in the final examination. The assessment components of the course are provided in Table 2.

Table 2. Assessment Components of Service Marketing

Assessment Methods	Component	Percentage
(a) Continuous assessment		50%
Test	20%	
Individual assignment	10%	
Group assignment	15%	
Participation	5%	
Individual assignment	10%	
(b) Final examination		50%
	Total	100%

To pass the course, students were required to obtain Grade D or above in both continuous assessment and the final examination. However, students needed to achieve Grade C or above in order to demonstrate a satisfactory standard of academic performance according to the assessment and outcome-based grading system of the college. Sixty-seven business students were enrolled in the course in 2017, and there was a clear indication that this cohort was unprecedentedly weak in academic performance compared with previous cohorts. Nineteen (28%) awarded with unsatisfactory results, with seven scoring D+ (barely satisfactory), six scoring D (barely adequate) and six scoring F (inadequate) in the mid-term test. Unsurprisingly, this group of low academic achievers often came late to or skipped class. They were very passive even when they were present, and they made no effort to contact the course leader before or after class. Despite a variety of learning activities being set in class, extra learning activities were arranged to reinforce concepts, facilitate group work, and alternative support was provided for learners after class and before the examination.

3. Study Objectives

This paper reports on how the low achievers responded and explores whether purposeful learning design activities would be able to transform these low academic achievers from failing in the mid-term test to achieving satisfactory or good academic performance in the final examination.

4. Method and Data Collection

4.1 Online Survey

An anonymous online survey was arranged via Survey Monkey to identify student needs, including any prior knowledge of the subject and their view on online platform experience at the beginning of the semester. Students were invited to take part in the study on a voluntary basis.

4.2 Observational Study

Adopting a natural setting for the study, unobtrusive observation was conducted to track their online activities compiled of weekly online exercise, viewing of video cases, and postings in forum discussion in eTutorial in the Learning Management System (LMS) on their participation throughout the course. Data on student downloading materials were not included for this study.

4.3 Data Collection

Data collected in the study included (1) results in mid-term test which was in the of format of multiple-choice questions, (2) all online participation activities were tracked after the course has closed, and (3) results of multiple-choice questions (MCQs) in the final examination. The points scored in MCQs were converted to grades such that they were compared with the mid-term quiz results in the study.

5. Learning Design

A series of learning activities were thoughtfully designed in the service marketing course to align with the course objectives. However, before designing learning activities in the course, the course leader needed to anticipate the potential issues or problems that students might encounter, such as workload and level of complexity of concepts. Considering that GenZ learners have shown a different pace of learning and learning styles, and diverse academic abilities in class, in- and out-of-class learning activities were arranged to allow for a variety of learning experiences that could match the pace and style of learning. In addition to in-class activities, some online activities were arranged in the LMS so that students could have further study flexibility. Learning design addressed two major aspects: conceptual knowledge and emotional support, so that the GenZ learners could learn effectively.

5.1 Assessing Student Needs

The course leader arranged an anonymous voluntary online survey via Survey Monkey at the beginning of the semester to gather prior knowledge related to service marketing and identify the need for alternative arrangements through the LMS. All students were encouraged to response, and the response rate was 75%. Of those who responded, 14% had basic knowledge, and 58% had little or very little knowledge of service marketing. Based on the survey results, the course leader made some adjustments and provided extra online materials and examples on the more complex concepts and theories.

5.2 Building Conceptual Knowledge

In the face-to-face sessions, images and graphics were built into PowerPoint presentations for GenZ learners because they tend to prefer a visual format (Rickes, 2016; Wotapka, 2017). However, "Where students had once called a large number of their classes death by lecture, now they were calling them death by PowerPoint" (Oblinger & Oblinger, 2005, 9.1).

In the lecture sessions, videos were used to gain students' attention and stimulate their interest in the assimilative activity, because these GenZ learners were so readily connected to video-based materials (Cameron & Pagnattaro, 2017; Nouri, 2016; Wiedmer, 2015). Some local cases were used to demonstrate concepts on service marketing using YouTube videos produced by Cathay Pacific (an airline), Queen Mary Hospital (Hong Kong), Tsui Wah (local restaurant), Dah Sun Life (local insurance company), and Dinner in the Sky. GenZ learners did not respond well to lectures and have become accustomed to interactivity (Feiertag & Berge, 2008). Watching videos was still a one-way communication with multimodal stimulation, and communication activities were deployed, including peer discussions on core concepts, sharing personal experiences, matching games for concept application and inviting students to ask questions. In addition, formative assessment was set in class because this could allow informal feedback to both learners and the course leader. Some quiz questions were set after watching videos like Mr. Bean and Pink Panther to assess their ability in concept application.

During term time, the course leader continued to collect student feedback verbally regarding their learning experiences at break time in lectures. Students were more readily to post questions during break time, and the course leader addressed them spontaneously.

5.3 Reinforcement of Conceptual Understanding

Apart from in-class activities, weekly materials were uploaded in the LMS for students to study at their own pace, including videos, supplementary materials and samples of service blueprints. Videos covered mostly difficult concepts, but they also included cartoons and real-life business cases.

Weekly online exercises (self-evaluation) were designed as one of the major online activities. All students were required to complete an online exercise that was due at midnight on the day of a lecture. All suggested solutions were posted in the LMS the following day. Late submissions would not be accepted. A participation mark was provided to those who participated in order to motivate the GenZ students to learn outside the classroom.

To cultivate an active eLearning attitude, students were encouraged to upload their tutorial outputs to the LMS after each tutorial for record purposes. To extend the eLearning experience, one eTutorial session was arranged in week 5, and students could watch videos and have online discussion. Participation of the bottom quartile students in the additional online activities is shown in Table 3.

Table 3. Participation of Low Academic Achievers in Additional Online Learning Activities

Student Ref. No.	Mid-term result	Weekly online exercise (max. 11)	No. of videos viewed (max. 14)	No. of times viewed	No. of access to eTutorial
1	D+	7	1	1	3
2	D+	7	1	1	6
3	D+	8	2	3	0
4	D+	11	5	7	12
5	D+	10	3	3	21
6	D+	6	1	1	6
7	D+	2	1	1	1
8	D	3	0	0	1
9	D	11	5	6	45
10	D	6	1	1	3
11	D	7	4	4	23
12	D	7	11	14	2
13	D	5	2	6	53
14	F	9	6	9	2
15	F	7	3	3	12
16	F	5	0	0	1
17	F	3	0	0	7
18	F	6	4	4	3
19	F	8	1	1	1

5.4 Providing Emotional Support

The emotional aspect is essential, because GenZ students tend to be emotional. For instance, GenZ learners show low interest in working in groups but show fear of missing out (FOMO) (Strong, 2016). Staying in “close touch” with students, the course leader regularly posted messages, reminders and updates via the LMS. Apart from connecting them via electronic messages, the course leader believed that it was essential to have some personal communication with students when teaching a large class. Students had to collect results of the mid-term test individually or in groups in her office. Majority of the low academic achievers collected the test result in groups. The course leader took the opportunity to provide encouragement and emotional support. Additional consultations were arranged after the mid-term test, and they could consider contacting the course leader via office telephone. This allowed the course leader to stay in “close touch” with them, especially the low achievers, and to provide more attentive emotional support.

5.5 Facilitating Group Processes

GenZ students can be better engaged through project work because they can be actively involved (Wiedmer, 2015), so 30% of the continuous assessment was on a group project in the course. Considering that students may be good at digital communication and prefer working independently, the course leader provided clear guidelines for the group assignment, including a declaration of individual responsibility to prevent free-riders and miscommunication. To enhance teamwork and time management in the group project, the course leader included the two components in the assessment rubrics so that they paid special attention during the process.

A briefing on assessment rubrics was conducted at the beginning of the semester so that students had a clear understanding of assessment information and the expectations from the course leader. She allocated one tutorial session in week 9 to facilitate student groups to discuss problems or issues related to the group projects. Student groups could consult her in the earlier stages about the project if they encountered any difficulties. The low academic achievers worked well with their team members, and they all submitted their projects on time. No complaints or time management issues were reported to the course leader.

5.6 Lowering Assessment Stress

Students in Hong Kong are very familiar with public and in-house tests and examinations. It is inevitable that they experience anxiety naturally. To lower the stress level on assessment, they were given mock quizzes for both the mid-term test and the final examination. The aim was to enable them to experience a mock summative assessment. All answers were then discussed in class. Two past examination papers were posted in the LMS for students to practise them at their own pace before the examination. Participation of the lower quartile students in the past examination papers is shown in Table 4. Suggested solutions were provided to them in the last tutorial session. In addition, a two-week pre-examination Buddies eForum was also arranged in the LMS for students to share their revision queries. It was a peer-to-peer eForum, and all students were encouraged to post their queries or difficult concepts to the forum when doing revision. Participation was on a voluntary basis, and additional participation marks were provided to those making contributions in forum discussion (Table 4).

Table 4. Participation of Low Academic Achievers in Online Assessment Preparation Activities

Student Ref No.	No. of access to two past exam papers	No. of views in Buddies eForum	Student Ref No.	No. of access to two past exam papers	No. of views in Buddies eForum
1	0	0	11	0	0
2	3	3	12	1	9
3	0	0	13	0	5
4	5	4	14	4	0

5	2	11	15	5	2
6	0	0	16	1	1
7	0	0	17	5	0
8	3	1	18	6	3
9	4	3	19	0	0
10	3	1			

6. Discussion and Conclusion

Learning design taxonomy provides a framework for educators to design a variety of learning opportunities to engage students at timely manner (Nguyen, Huptych, & Rienties, 2018). Nevertheless, low academic Gen Z learners needs not only opportunities but more support from both teacher and peers. Majority of the low academic achievers kept in close communication with the course leader after the mid-term test so that she could keep monitoring their study progress and provide support. Many of these students were motivated and encouraged by the course leader during the consultation sessions and were positively influenced by peers in the online forum activities.

Of the 67 students, the 19 low academic achievers were identified in the mid-term test results. Seven out of 19 (36.8%) scored D+, six out 19 (31.6%) scored “D” and six out 19 (31.6%) scored “F”. Through learning design, the course leaders arranged a variety of online activities and resources to provide alternative support. Students engaged in formative assessment can increase their self-regulation, reasoning and planning, and all these are important for effective learning (Clark, 2012). As shown in Table 3, 11 out of 19 (61%) students participated seven times or more out of 11 required weekly exercises. Four of the 19 (21%) students watched five or more online videos; five (26%) students watched six or more. In fact, six students (#3, #4, #9, #12, #13, #14) revisited the same video more than once. In week 5, an eTutorial was arranged in which six students (#4, #5, #9, #11, #13, #15) were very active, with 12 or more accounts of access.

The LMS offered students the possibility of having an alternative mode to test and review concepts. To lower student stress in the preparation for the examination, they were given the chance to practise past examination papers and discuss them in Buddies eForum (Table 4). Nine out of 19 (47%) of students accessed past papers three times or more, and seven out of 19 (37%) accessed the eForum during the two weeks. The results of the alternative learning path show different degrees of academic improvement.

After completing the 13-week course with holistically designed learning activities (assimulative, communication and assessment activities), some impressive progress was observed from the low academic achievers. Seventeen out of the 19 (89%) were able to attain Grade C or above in the MC section of the final examination (Table 5). Ten out of the 19 (53%) reached Grade C or above in the overall examination grade, and that C means reaching a satisfactory standard of academic performance in the college. Students #6, #9 and #16 made extraordinary improvements. It was recognized that

student #9 made great efforts in the weekly online exercise, online videos, eTutorial forum and pre-examination activities, and was able to achieve significant improvement in terms of the final examination performance (i.e., Grade A+). Student #6 made an outstanding improvement and attained Grade B+ in the final examination (from Grade D+ in the mid-term test). Of the six who failed in the mid-term test, three reached Grade C or above. Noticeably, student #16 jumped from Grade F to B+, and student. #14 improved from Grade F to C+, and students #15 and #18 scored Grade C.

The study showed that those who made consistent efforts in the online activities were able to obtain satisfactory or good grades in their final examination. It was undoubtedly encouraging to note that most were able to achieve either good or outstanding results in their final examination. However, student #17 seemed to be very passive and made limited efforts in the online activities, so there was only a minor improvement in performance in the final examination. As a study, limitations are observed including a lack of qualitative data such as interviews with these students to provide a more in depth understanding on their perceptions on these additional activities. Second, further investigation can be continued to examine whether teacher's personal support, peer support or variety of additional activities make higher impact on student motivation to learn.

References

Butler, R., & Neuman, O. (1995). Effects of Task and Ego Achievement Goals on Help-seeking Behaviors and Attitudes. *Journal of Educational Psychology*, *87*, 261-271. https://doi.org/10.1037/0022-0663.87.2.261

Cameron, E., & Pagnattaro, M. (2017). Beyond Millennials: Engaging Generation Z in Business Law Classes. *Journal of Legal Studies Education*, *34*(2), 317-324. https://doi.org/10.1111/jlse.12064

Caruso, J. B., & Salaway, G. (2008). The ECAR Study of Undergraduate Students and Information Technology (2008). *Research study*, *8*. Retrieved November 15, 2018, from https://www.educause.edu/ir/library/pdf/ECM/ECM0808.pdf

Clark, I. (2012). Formative Assessment: Assessment is for Self-regulated Learning. *Educational Psychology Review*, *24*(2), 205-249. https://doi.org/10.1007/s10648-011-9191-6

Cole, A., Napier, T., & Marcum, B. (2015). *Generation Z: Facts and fictions*. Retrieved April 29, 2018 from https://encompass.eku.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com.hk/&httpsredir=1&article=1029&context=fs_research

Conole, G. (2009). The Role of Mediating Artifacts in Learning Design. In L. Lockyer, S. Bennett, S. Agostinho, & B. Harter (Eds.), *Handbook of Research on Learning Design and Learning Objects: Issues, Applications, and Technologies* (pp. 188-208). IGI Global. https://doi.org/10.4018/978-1-59904-861-1.ch008

Crappell, C. (2013). Preparing GenZ Students for Effective Practice. *American Music Teacher*, *63*(1), 12-17.

Cross, S., Galley, R., Brasher, A., & Weller, M. (2012). *OULDI-JISC Project Evaluation Report: The impact of new curriculum design tools and approaches on institutional process and design cultures*. Retrieved October 1, 2018, from https://oro.open.ac.uk/34140/1/OULDI_Evaluation_Report_Final.pdf

Cross-Bystrum, A. (2010). What You Need to Know About Generation Z. *iMedia Connection*. Retrieved July 30, 2018, from http://www.imediaconnection.com/content/27425.asp#multiview

Culén, A. L., & Gasparini, A. A. (2012). Situated Techno-cools: Factors that contribute to making technology cool in a given context of use. *Psychology Journal*, *10*(2), 117-139.

Feiertag, J., & Berge, Z. (2008). Training Generation N: How educators should approach the Net Generation. *Education Training*, *50*(6), 457-464. https://doi.org/10.1108/00400910810901782

Gorjian, B., Moosavinia, S., Kavari, K. E., Asgari, P., & Hydarei, A. (2011). The Impact of Asynchronous Computer-assisted Language Learning Approaches on English as a Foreign Language High and Low Achievers' Vocabulary Retention and Recall. *Computer Assisted Language Learning*, *24*(5), 383-391. https://doi.org/10.1080/09588221.2011.552186

Greydanus, D. E., & Greydanus, M. M. (2012). Internet use, misuse, and addiction in adolescents: Current issues and challenges. *International Journal of Adolescent Medicine and Health*, *24*(4), 283-289. https://doi.org/10.1515/ijamh.2012.041

Hope, J. (2016). Get Your Campus Ready for Generation Z. *Student Affairs Today*, *19*(7), 1-7. https://doi.org/10.1002/say.30253

Lai, K., & Hong, K. (2015). Technology Use and Learning Characteristics of Students in Higher Education: Do generational differences exist? *British Journal of Educational Technology*, *46*(4), 725-738. https://doi.org/10.1111/bjet.12161

Lai, K. W., Khaddage, F., & Knezek, G. (2013). Blending Student Technology Experiences in Formal and Informal Learning. *Journal of Computer Assisted Learning*, *29*, 414-425. https://doi.org/10.1111/jcal.12030

Lockyer, L., Heathcote, E., & Dawson, S. (2013). Informing Pedagogical Action: Aligning learning analytics with learning design. *American Behavioral Scientist*, *57*(10), 1439-1459. https://doi.org/10.1177/0002764213479367

Lorenzo, G., & Dziuban, C. (2006). *Ensuring the Net Generation is Net Savvy*. Boulder, CO: EDUCAUSE. Retrieved June 22, 2017, from http://www.understandingxyz.com/index_htm_files/Net%20Gen%20paper.pdf

Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are Digital Natives a Myth or Reality? University students' use of digital technologies. *Computers & Education*, *56*(2), 429-440. https://doi.org/10.1016/j.compedu.2010.09.004

McCoach, D. B., & Siegle, D. (2001). A Comparison of High Achievers' and Low Achievers' Attitudes, Perceptions, and Motivations. *Academic Exchange*, *2*, 71-76.

Mohr, K. A. (2017). Understanding Generation Z Students to Promote a Contemporary Learning Environment. *Journal on Empowering Teaching Excellence*, *1*(1), 83-94.

Nouri, J. (2016). The Flipped Classroom: For active, effective and increased learning-especially for low achievers. *International Journal of Educational Technology in Higher Education*, *13*(1), 1-10. https://doi.org/10.1186/s41239-016-0032-z

Nguyen, Q., Huptych, M., & Rienties, B. (2018). *Linking Students' Timing of Engagement to Learning Design and Academic Performance.* Proceeding of LAK'18: International Conference on Learning Analytics and Knowledge, Sydney, NSW, Australia. ACM, New York, NY, USA, 7-9 March 2018. Retrieved November 25, 2018, from http://oro.open.ac.uk/53939/1/p141-nguyen.pdf.

Nguyen, Q., Rienties, B., & Toetenel, L. (2017). *Unravelling the Dynamics of Instructional Practice: A longitudinal study on learning design and VLE activities* (pp. 168-177). Proceedings of the Seventh International Learning Analytics & Knowledge Conference, ACM. https://doi.org/10.1145/3027385.3027409

Oblinger, D., & Oblinger, J. (Eds.). (2005). *Educating the Net Generation*. EDUCAUSE. Retrieved September 20, 2017, from http://www.educause.edu/ir/library/pdf/pub7101.pdf

Palley, W. (2012). *GENZ: Digital in their DNA.* New York: JWT Intelligence.

Rickes, P. C. (2016). Generations in Flux. *Planning for Higher Education*, *44*(4), 21-45.

Rideout, V. J., Foehr, U. G., & Roberts, D. F. (2010). *Generation M2: media in the lives of 8- to 18-year-olds*. Menlo Park, CA: Henry J. Kaiser Family Foundation. Retrieved August 17, 2018, from https://files.eric.ed.gov/fulltext/ED527859.pdf

Rienties, B., & Toetenel, L. (2016). The Impact of Learning Design on Student Behaviour, Satisfaction and Performance: A cross-institutional comparison across 151 modules. *Computers in Human Behavior*, *60*, 333-341. https://doi.org/10.1016/j.chb.2016.02.074

Roberson, C. (2011). Aligning Generations to Improve Retention in Introductory Computing Courses. *Journal of Computing Sciences in Colleges*, *26*(6), 30-36.

Ruban, L., & Reis, S. (2006). Patterns of Self-regulatory Strategy Use Among Low-achieving and High-achieving University Students. *Roeper Review*, *28*(3), 148-156. https://doi.org/10.1080/02783190609554354

Schroer, W. J. (2008). *Generations X, Y, Z and the Others*. The Portal 40:9. Retrieved May 18, 2018 from https://s3.amazonaws.com/rdcms-iam/files/production/public/newimages/portalpdfs/2008_03_04.pdf

Strong, R. (2016). Social Media, FOMO and the Perfect Storm for the Quarter-life Crisis. *Juffpost*. Retrieved August 15, 2018, from https://www.huffpost.com/entry/social-media-fomo-and-the_n_9880170

Vispoel, W. P., & Austin, J. R. (1995). Success and Failure in Junior High School: A critical incident approach to understanding students' attributional beliefs. *American Educational Research Journal*, *32*(2), 377-412. https://doi.org/10.3102/00028312032002377

Wiedmer, T. (2015). Generations Do Differ: Best practices in leading traditionalists, boomers, and generations X, Y, and Z. *Delta Kappa Gamma Bulletin*, *82*(1), 51-58.

Wotapka, D. (2017). How to Teach GenZ Students—Prepare for the next generation arriving on campus. *Extra Credit Newsletter*. Retrieved April 12, 2018, from https://www.aicpa.org/interestareas/accountingeducation/newsandpublications/how-to-teach-generation-z-students.html