2018

How Do Millennials Learn? An Investigation of the Learning Styles, Strategies, and Perceived Academic Success Among College-aged Millennials

Lalar Hannans
Georgia Southern University

Jolie Johnson
Georgia Southern University

Brittany Litton
Georgia Southern University

Ivana Torres
Georgia Southern University

Follow this and additional works at: https://digitalcommons.northgeorgia.edu/papersandpubs

Part of the Education Commons, and the Nursing Commons

How Do Millennials Learn? An Investigation of the Learning Styles, Strategies, and Perceived Academic Success Among College-aged Millennials

How Do Millennials Learn? An Investigation of the Learning Styles, Strategies, and Perceived Academic Success Among College-aged Millennials

**Lalar Hannans,
Jolie Johnson,
Brittany Litton,
and Ivana Torres**
Georgia Southern University

Abstract: Research shows millennials learn better by actively doing things than listening to lectures. However, there is little research on millennials and how they learn or what drives them towards success. The purpose of this study was to investigate the preferred learning styles of undergraduate college students and their perception of academic success. Data collection included quantitative and qualitative measures that were used to collect data from a convenience sample of 344 undergraduate college students in a rural southeast regional university. Study was IRB approved prior to data collection. Data were analyzed using appropriate descriptive statistics, cross-tabulations, and coding of qualitative data. Findings indicated that 35.4% of the 344 participants self-reported as kinesthetic (hands-on) learners compared to visual (23.6%), auditory (17%), and read/write (24%) learners. Findings also revealed that only 12.9% of the participants "spend 3 or more hours a day outside of class studying; 34% "ask for help when they do not understand something in class"; 41.1% "feel comfortable approaching professor for extra help" and 60.6% "prefer a teacher who incorporates hands-on activities with lecture." Millennials in this study defined academic success as (1) establishing effective learning habits, (2) attending class regularly to maintain consistent performance, (3) achieving academic goals, and (4) making good grades. Incorporating kinesthetic activities in the classroom setting will positively enhance learning outcomes and academic success of millennial college students.

❧

> Academic success is learning from your mistakes, so even when you make a bad grade, it does not stop there, it is not over. You go back to see where you are lacking and improve until you understand. The understanding is the success, not the number that determines the grade.
>
> — *Undergraduate Female Sophomore, Health Major*

Many millennial students are faced with many more distractions than previous generations. They are characterized as digitally savvy, skilled with computers, cell phones, smart phones, and social media. They depend on the Internet for retrieving information, texting instead of calling on the phone, and emailing instead of writing letters. They get bored easily and engage more with their smart phones. Teaching approaches carried out decades ago no longer apply to how students today are learning and retaining information (Olszewski, 2016; Howe & Strauss, 2007). They desire to be engaged in their learning, and lecture alone will not do it.

The VARK learning model, developed by Neil Fleming, has been explored by investigators seeking to understand how students learn (Michael & Prithishkumar, 2014). The questionnaire offers an individualized approach to comprehending how learning preferences and ways in which individuals receive and process information are influential in active learning. *V* stands for visual learners that require graphs, brochures,

and charts to learn more efficiently; *A* stands for auditory learners who retain information better during lectures, discussions, and seminars; *R* for read/write learners who prefer taking notes, writing essays, and reading textbooks; and *K* for kinesthetic learners who prefer hands on approaches like role playing, laboratories, field trips, to learn best. Fleming's model has been used worldwide and has been known to be effective in enhancing student understanding and learning motivation. In addition, the VARK model showed higher student performance in courses where educators incorporated students' learning styles into the learning activities (Hawk, 2007).

The Learning Style Inventory Theory, developed by David Kolb, is another approach that researchers have utilized to better understand how students learn. The Learning Style Inventory theory uses a method for describing how students solve problems and apply new knowledge from personal experience within their learning environments (Olivos, Santos, Martin, Canas, Gomez-Lazaros & Maya, 2014). It classifies the learning styles as accommodators, divergers, assimilators, and convergers. *Divergent learners* use their intuition to process information and exhibit concrete thinking, whereas *accommodators* exhibit concrete thinking, while actively processing information (Olivos et al., 2014). *Convergent learners* and the *assimilators* both engage in abstract thinking but differ in that they use active and reflective processing of information, respectively (Olivos et al., 2014). Considering the use of a more holistic style of learning classification may help educators change the way they present information to students in a classroom setting. Previous research has suggested that the assessment of learning styles can aid educators in developing teaching strategies (Tulbure, 2012; Harmon, Alpert, Banik, & Lambrinos, 2015; Chavan, 2011; Mitchell, James, & D'Amore, 2015).

Self-confidence and self-efficacy are important to one's academic success (Liem, Lau, & Nie, 2008; Bong, 2004). Bandura's theory of self-efficacy involves how beliefs determine cognitive processing, including: motivation, emotional arousal, and behavior. The self-efficacy

theory is significant because it shows an impact on behavior and influences other psychological variables. There are two types of expectations of success that the Self-Efficacy theory describes. The first expectation is called outcome expectations which refers to the belief that certain behaviors will produce certain outcomes (McCabe, 2015). The second efficacy expectation which is belief that one has the capabilities to perform the behavior required to produce an outcome (McCabe, 2015). Self-efficacy is known to reflect an individual's confidence to achieve a goal.

Previous studies have been conducted to understand millennials and how they function under certain conditions given their individual qualities. More than half of millennials are known for their multi-tasking qualities and for heavily incorporating technology in most aspects of life. However, there is little information on millennials, in regards to how they learn or what drives them towards success. Understanding millennial college students and how they learn is essential to their academic success. The research questions guiding this study are:

1. How do millennial college students learn?
2. What are their preferred learning styles?
3. How do millennials perceive their ability to achieve academic success?
4. How do they define academic success?

Review of Literature
Kirklin et al. (2013) investigated the impact of multiple technologies in nursing courses among millennial student nurses. Classroom technology included electronic clickers, virtual learning, podcasts, patient simulators, and computerized testing. Data collected from 108 nursing students, of which the majority of the participants were sophomores. While participants reported that virtual learning, clickers, and the patient simulators positively impacted their class participation and critical thinking skills, a large percentage of the cohorts reported they preferred computerized testing (Kirklin et al., 2013). One of the limitations of this study was the investigators were faculty members that currently worked at the university. This study suggests that millennial students learning were positively affected by

technology in the classroom setting.

Saga, Qamar, and Trali (2015) analyzed the learning preferences of preclinical students at the Department of Anatomy at Army Medical College using the VARK learning model. Participants consisted of 400 first- and second-year undergraduate students who completed a Visual, Auditory, Read/Write, Kinesthetic version 7.8 questionnaire. Student responses were assessed to determine the significance in how often individuals applied a specific learning style to several situations in daily life (Saga, Qamar, & Trali, 2015). Out of the 400 students, 38% of students preferred a unimodal learning style, 34% were auditory and 36% were kinesthetic learners. However, the study showed a majority of the learners preferred a multimodal method.

On average, 58% of undergraduate students in the United States complete college within a six-year period (Turner & Thompson, 2014). A student's successful, productive freshman year in college is essential to the success and completion of the student's college experience. It has been stated that some millennials face many challenges transitioning from the high school setting to the college environment. Turner and Thompson (2014) found this generation requires an increased use of technology and communication strategies to be integrated into their learning. Millennials' reflections of their freshmen experience provided insight on obstacles faced and factors that could have created a smoother transition. Turner and Thompson (2014) found that the transition into the college environment for freshmen is directly influenced by the integration of the social and academic involvement the student experiences. This integration is successful when there is a balance of the two. Turner and Thompson (2014) recommended that freshmen of the millennial generation "need ongoing academic guidance, a collaborative and interactive learning environment, and skill development training during the first year to create a seamless social and academic transition into the college environment" (Turner &

Thompson, 2014).

Harmon, Alpert, Banik, and Lambrinos (2015) explored how instructor-provided lecture notes and individual learning styles influenced learning outcomes and attendance rates in a principles of economics course. Classroom settings for principles of economics have been typically taught in large-scaled lecture halls using traditional methods of teaching where a professor lectures and students take notes while listening. Data was collected from a convenient sample of 125 undergraduate students at a large northeastern public university that were enrolled in an introductory economics course. In this course, the instructor provided students with lecture notes that went along with a live PowerPoint presentation. The researchers gathered data using iClickers to record attendance, participants' college transcripts, and a student survey that included information regarding learning styles and demographic characteristics. The results concluded that a majority 54% (39) of students were classified as having a multimodal learning style and that 7% (10) students were visual learners (Harmon et al., 2015). Students who claimed to have never been absent held GPAs that were six percent higher than students who had absences. This finding supports the general claim that students who attend class more may have better learning outcomes. The authors concluded that classes in which professors provided lecture notes that outlined online PowerPoint correlated to lower rates of class absenteeism.

Methods
Research Design
The study was approved by the authors' Institutional Review Board (IRB) prior to data

Table 1: Definition of Key Terms

Learning Strategies	Students' self-generated thoughts, feelings, and actions, which are systematically oriented toward attainment of their goals.
Learning Styles	An individual's unique approach to learning based on strengths, weaknesses, and preferences.
Self-efficacy	The belief in one's capabilities to organize and execute the courses of action required to produce given attainments.

collection. A total of 350 surveys were distributed to undergraduate students in a general core class in the colleges of Business Administration, Health and Human Sciences, Education, Public Health, Liberal Arts, Science and Mathematics; and student common areas including the University Library. Study participants had to be 18 years or older, participation was voluntary. The investigators took several steps during the administration of the survey to ensure the participants' anonymity and confidentiality. Instructions provided to participants included: 1) no names on the survey, 2) all individuals had to be 18 years or older to participate, 3) participation was voluntary, and 4) completion and return of the survey indicated informed consent. Ineligible participants returned their blank surveys to a manila folder that was placed at the front of the classroom. Completed surveys were kept in a locked safe accessible only to the research team and advisor. Terms used in the study were defined in Table 1.

Instrument Description

A four-part questionnaire was used to collect data relating to demographics, learning strategies, self-efficacy, and academic success. Questions were collected from established questionnaires such as the VARK questionnaire (VARK a Guide to Learning Styles, n.d.), the General Self-Efficacy scale (General Self-Efficacy, n.d.), and the Learning Strategies Inventory (McGuire, n.d.), all of which have yielded accurate results in previous research studies.

Demographic information included age, class level, college major, and grade point average (GPA), number of times changing academic major since enrolling in college, and type of learning style. Individual learning styles were classified as either visual, aural, reading/writing, and kinesthetic learners. The higher the number frequency of answers that were related to a particular learning style indicated the classification of the learner. Learning strategies measured student engagement in activities that would improve learning. The participants rated the statements based on accuracy where, 4 = Always, 3 = Occasionally, 2 = Rarely, and 1 = Never. Students with more 4s implied that they

engage in more activities to learn information. Self-efficacy measured the confidence and their ability to achieve academic success using two categorical responses "Agree and Disagree" to statements based on accuracy. Survey included an open-ended question that instructed participants to define academic success. The short answers were reviewed, and similar answers were

Table 2: Sample Demographic Characteristics
N=344

	Frequency	Percent (%)
Age		
18-20	209	60.8
21-24	122	35.5
>25	13	3.7
Sex		
Male	114	33.1
Female	230	66.9
Classification		
Freshman	69	20.1
Sophomore	93	27.0
Junior	114	31.1
Senior	64	18.6
Other	4	1.2
On Track to Graduate on Time		
Yes	310	91.4
No	62	8.6
Number of times changed Major since enrollment in college		
At least one change in Major	280	81.9
Two or more changes in Major	62	18.1
Preferred Learning Styles		
Visual	83	23.7
Auditory	58	17.0
Read/Write	82	23.9
Kinesthetic	112	35.5

Table 3: Learning Strategies for Academic Strategies
Item Description (N=344)

	Always (%)	Occasionally (%)	Rarely (%)	Never (%)
I spend at least an hour studying outside of class	49.4	39.3	10.1	1.2
I spend 3 or more hours a day outside of class to study.	13.4	38.6	32.0	16.0
I feel comfortable approaching my professor when I need extra help.	42.7	39.2	15.1	3.0
I preview the material that will be discussed before I go to class.	8.0	27.0	43.0	22.0
I get better grades when I cram study.	9.5	40.8	35.7	14.0
I learn best using online resources.	21.6	39.6	23.7	15.1
I go over my lecture notes as soon as possible after class to rework them and note problem areas.	5.3	25.8	42.4	26.4

grouped into categories. The survey took about 10-15 minutes to complete. Participation was voluntary and implied passive consent.

Quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS) version 23.0. Open ended responses to the definition of academic success were summarized to reflect the majority of participants' responses. Similar responses were categorized into themes for meaning.

Findings

A demographic profile of the participants is presented in Table 2. Of the 344 total participants; 66.9% were female, and 60.8% were between 18 and 20 years old, all were undergraduate students and represented different colleges including information technology, education, business administration, liberal arts, health sciences, public health, and science and mathematics. A majority (91.4%) of the participants indicated they were on track to graduate on time; only 18.1% self-reported they had changed their major 2 or more times since enrolling in college.

Participants' learning strategies for academic success (Table 3) show that while 49.4% always spend at least an hour studying outside of class, only 13.4% reported they always spend 3 or more hours a day outside of class to study. In addition, only 5.3% self-reported they go over lecture notes after class to rework them and note problem areas. Interestingly, only 21.6% indicated that they always learn best using online resources compared to 38.6% that rarely or never use online resources to support their learning.

Perceived self-efficacy of participants and their ability to solve challenging situations to achieve academic success are displayed in Table 4. Findings indicate 63% of participants prefer class work that is challenging, 83.4% indicated they can succeed at most endeavor to which I set my mind, and only 17.5% either give up when work is hard or only study the easy parts. While millennials are perceived to be technological savvy, about 62% of the study participants disagree to learning best when using technology.

Perceived Definition of Academic Success

Qualitative responses revealed four overall

Table 4: Self-Efficacy: Perceived Ability to Achieve Academic Success
Item Description (N=344)

	Agree (%)	Disagree (%)
I prefer class work that is challenging so I can learn new things.	37.0	63.0
It is important for me to learn what is taught in this class.	88.9	11.1
I learn best when I'm able to use technology.	38.4	61.6
I'm easily distracted when my fellow classmates have their computers out.	16.7	83.3
I can always manage to solve difficult problems if I try hard enough.	66.1	33.9
I am confident that I could deal efficiently with unexpected events.	69.6	30.4
Even when I do poorly on a test, I try to learn from my mistakes.	76.7	23.3
Compared to other people, I can do most tasks very well.	60.2	39.8
When work is hard, I either give up or study only the easy parts.	17.5	82.5
I believe I can succeed at most any eneavor to which I set my mind.	83.4	16.6
When I am confronted with a problem, I can usually find several solutions.	61.0	39.0

themes that supported millennials' definition of academic success:

> (1) learning,
> (2) performance,
> (3) achieving goals, and
> (4) making good grades.

A selection of responses reflecting each theme based on majority perception on academic success is summarized below.

Learning

It is the ability to relate the information taught and understand it well while making the grades needed for success

> — *Male Freshman, Business Administration*

Performance

I think academic success is working your hardest and trying your best to get good grades. Performing at the best of your ability with your gifts and talents and learning to compensate for your weaknesses. It is about education, not grades.

> — *Female Sophomore, Liberal Arts*

Achieving Goals

Accomplishing goals for yourself, learning efficiently, and gaining the proper knowledge from the class and reflecting in the class with a passing grade.

> — *Female Junior, Health Sciences*

Making Good Grades

Mastering the material well enough to get a good grade. What is considered a good grade is relative to the difficulty of the class.

> — *Female Senior, Science and Mathematic*

Discussion

The findings of this research study indicate that millennials' learning strategies do not align with their academic success. There is a disconnection between perceived learning strategies and academic success. While participants in this study understand what academic success is, only a small percent previewed material prior to class, studied more than three hours a day outside of class, and/or reviewed their notes after class for comprehension or re-enforcement. Though a majority of the participants in this self-reported as kinesthetic learners, findings indicated that a majority do not learn well with technology. This interesting finding may suggest that personal knowledge of smart phone use is not the same as use of classroom technology as a learning tool to earn a grade or evaluate performance. Online learning requires self-learning, maturity, and independence compared to face-to-face classroom learning that provides a sense of student dependency, guidance, and supervision from educators. A combination of multi-modal teaching approaches including the use of lectures, visuals such as PowerPoint, hands-on activities, and online resources should be considered to enhance the academic success

of millennials.

Though the present study adds to the literature on teaching strategies to help millennials be effective learners in the classroom, some limitations do exist. Race and ethnicity was not identified therefore we were unable to do comparison analysis on learning styles and strategies among students of diverse backgrounds. Information was self-reported and therefore findings should be interpreted with caution beyond the participants in this study.

Conclusion

How education is transferred in millennials is an important factor in future learning outcomes. It is known that a majority of millennials are more difficult to understand and more difficult to teach in higher education. Although it has been implied that a majority of millennials may process information in different ways than earlier generations, the principles of learning and memory still apply. By using their knowledge of the learning process, educators need to create an adaptive environment in the classroom that caters to individual learning needs. It is important that millennial learners use multi-modal resources to allow them to actively participate in their learning to produce desirable results for students and educators. Meeting the learning challenges of millennials in higher education is difficult. However, effective educators must be intentional in their teaching. This includes understanding the factors in the classroom environment, respecting the individuality of each student, believing in each student's ability to be successful, and recognizing that not all millennials fit the stereotype.

References

Bong, M. (2004). Academic motivation in self-efficacy, task value, achievement goal orientations, and attributional beliefs. *The Journal of Educational Research*, 97(6), 287-298.

Chavan, M. (2011). Higher Education Students' Attitudes Towards Experiential Learning in International Business. *Journal of Teaching in International Business*, 22(2), 126-143. doi:10.1080/08975930.2011.615677.

Harmon, O., Alpert, W., Banik, A., & Lambrinos, J. (2015, July 23). Class Absence, Instructor Lecture Notes, Intellectual Styles, and Learning Outcomes. *Atlantic Economic Journal*, 43 (3), 349-361. doi:10.1007/s11293-015-9470-6. Retrieved from Galileo.

Hawk, T.F., & Shah, A.J. (2007). Using Learning Style Instruments to Enhance Student Learning. *Decision Sciences Journal of Innovative Education*, 5 (1), 1-19. doi:10.1111/j.1540-4609.2007.00125.x

Howe, N., & Strauss, W. (2007). *Millennials go to College: Strategies for a New Generation on Campus: Recruiting and Admissions, Campus Life, and the Classroom* (2nd ed.). Great Falls: LifeCourse Associates

Kirklin, D., Montenery, S. M., Ross, C., Sorensen, E., Thompson, R., Walker, M., & White, R. (2013). Millennial Generation Student Nurses' Perceptions of the Impact of Multiple Technologies on Learning. *Nursing Education Perspectives (National League for Nursing)*, 34 (6), 405-409. Retrieved from Galileo.

Liem, A. D., Lau, S., & Nie, Y. (2008). The role of self-efficacy, task value, and achievement goals in predicting learning strategies, task disengagement, peer relationship, and achievement outcome. *Contemporary Educational Psychology*, 33(4), 486-512.

Luszczynska, A., & Schwarzer, R. (2005). Social cognitive theory. In M. Conner & P. Norman (Eds.), *Predicting health behaviour* (2nd ed. rev., pp. 127-169). Buckingham, England: Open University Press.

McCabe, R.E. (2015). Self-Efficacy Theory. In I. Milosevic (Ed.), *Phobias: The psychology of irrational fear*, 346-348. Connecticut: Greenwood Publishing Group, Incorporated.

McGuire, S.Y. (n.d.). *Analytical Chemistry Performance Prognosis Inventory*. Retrieved from https://www.broward.edu/sacs/qep/SiteAssets/Lists/Teaching%20and%20Learning%20Resources/EditForm/KG_Performance%20Prognosis.pdf

Michael, S.A. & Prithishkumar, I.J. (2014, April). Understanding your student: Using the VARK model. *Journal of Postgraduate Medicine*, 60(2), 183-186. doi: 10.4103/0022-3859.132337.

Mitchell, E.K., James, S., & D'amore, A. (2015).

How Learning Styles and Preferences of First-Year Nursing and Midwifery Students Change. *Australian Journal of Education*, 59(2), 158-168. doi:10.1177/0004944115587917

Nevid, J. (2011, May/June). Teaching the Millennials. *Observer*, 24(5). Retrieved September 25, 2016.

Olivos, P., Santos, A., Martín, S., Cañas, M., Gómez-Lázaro, E., & Maya, Y. (2016, February 26). The Relationship Between Learning Styles and Motivation to Transfer of Learning in a Vocational Training Programme. *Suma Psicológica*, 23(1), 25-32. doi:10.1016/j.sumpsi.2016.02.001

Olszewski, O. (2016, January). Teaching Millennials how to Study Under the 21st Century sky. *Pyrex Journal of Educational Research and Reviews*, (2), 01-09. Retrieved from http://www.pyrexjournals.org/pjerr/pdf/2016/february/peter.pdf

Questionnaire 2- General Self-Efficacy Scale. (n.d.). Retrieved from https://www.stir.ac.uk/media/services/careers/documents/Self-efficacy.pdf

Saga, Z., Qamar, K. & Trali, G. (2015) Learning Styles-Understand for Learning Strategies. *Pakistan Armed Forces Medical Journal*, 65(5), 706-709. Retrieved from ScopeMed.

The Center for Generational Kinetics. (n.d.). Generational breakdown: Info about all of the generations. Retrieved from http://genhq.com/faq-info-about-generations/

Tulbure, C. (2012). Learning Styles, Teaching Strategies and Academic Achievement in Higher Education: A Cross-Sectional Investigation. *Procedia - Social and Behavioral Sciences*, 33, 399. doi: 10.1016/j.sbspro.2012.01.151

Turner, P. & Thompson, E. (2014). College Retention Initiatives Meeting the Needs of Millennial Freshman Students. *College Student Journal*, 48(1), 94-104. Retrieved from Questia.

VARK a Guide to Learning Styles. (n.d.). The VARK questionnaire how do I learn best? Retrieved from http://vark-learn.com/the-vark-questionnaire/

ॐ

Contributor Bios

All authors were undergraduate senior nursing students in the Georgia Southern University Bachelor of Science in Nursing (BSN) Program. They all graduated in the Fall 2017. Each contributor is presently practicing in medically underserved areas, specializing from pediatric to adult care. The each aspire to pursue graduate nursing education in their specialized practice after one year of primary care nursing.

Acknowledgments