

ADAPTING TO OR CHANGING OUR STUDENTS? Millennials' Learning Behaviour and Its Implications on Educational Management

Adi Suryani, Soedarso, Wahyuddin, Siti Zahrok

Department of Development Studies

Faculty of Business and Management Technology

ITS (Institut Teknologi Sepuluh Nopember)

adisuryani.rahman@gmail.com

Abstract

Understanding their students is a part of educators' task. Knowledge of their students' social context of development may furnish teachers' effort to engage their students to active learning process. Moreover, the learner-centred education paradigm needs teachers to be more concern on students as active learners by creating learning environment and educational management which are relevant to students' characteristics. Recently, the new generation, the millennials, are flourishing higher education. They are different from their predecessor cohorts as the millennials are digital natives who are born and grown by information, communication and technology. Many studies on millennial students indicate needs for teachers to change and follow the demands of this new generation. However, education is not always about just accepting recent generation's all styles and behavior. It involves broader process of changing, adapting and enhancing. This study aims to explore several teachers' lived experience on managing millennials' learning process, behaviour and the consequences for educational management and teachers' professional development. The data are collected through direct observation and reflective notes on daily teaching practices in language and social sciences classrooms. The study indicates that balancing between adapting and changing teaching-learning process is required. There are several areas should be re-considered. The first area is teachers should manage the on-line and off-line learning. Secondly, some positive technological-impacted characters should be balanced by reviving previous characters or mindset. Thirdly, re-designing learning environment should be taken into account. Fourthly, the educators should also adapt to technological changes and improve their knowledge and skills.

Keywords: educational management, millennials, learning behavior, teacher lived experience, teacher knowledge

INTRODUCTION

Currently, higher education is flooded by new generation of students, the millennials. This Generation Y is indicated possessing different characteristics compared to the previous generation. The millennials are intensely engaging with information, communication and technology which is potentially influence their learning styles,

behavior and value. Some millennials may rely too heavily on recent ICT. This on-screen culture injects the instant habit and tendency to get quick, ready information and messages form internet. Blurred national and international boundary impacts on the gradual disappearing of local cultural values since the millennials begin to adopt foreign culture. Internet also widens the millennials'

socialization, including through social media, can influence how they communicate and interact. Mismatch between millennials' communication and interaction styles and teachers' behavioural expectation can ignite inter-generational conflict. In spite of millennials' drawbacks, they can be highly productive human resources. They are highly informative, creative and diverse creators. Internet opens wide opportunities for millennials to establish broader network, associations and absorb more knowledge than their predecessors. Dealing with diversity and being multi-tasking generation are indicated as strengths of Generation Y.

These particular characteristics tend interrupt the progressing educational process. Teachers should reflect, rethink and reinvent new teaching and learning methods to suit into the demands and styles of today's cohort. Thus, upgrading knowledge and increasing professional development efforts are needed by teachers. Currently, many educational institutions are improving the quality of their learning facilities, environment, systems and procedures to keep pace with the digital world and accommodate the new generation. Thus, the millennial learners stimulate changes in learning educators, environments, management and materials.

This study aims to examine learning behavior and character of today's students and how they interface teachers' classroom management and teachers' learning. Many studies explore characteristics of the millennials and what educators do to adjust to. Differently, this study proposes a balancing paradigm between adapting to and changing today's students. As we believe that

education is a changing process. Ineffective learning ways should be changed, while effective learning behavior should be confirmed, rewarded and enhanced. This study is based on our lived experiences as teachers/lecturers which processed through reflective actions. Teachers are implementers as well as theorists and consequently, their reflective thinking may influence both their classroom management as well as students' learning (Ramsden, 1992).

Theoretical Framework:

Millennial students

Recently, how millennials behave is receiving deep concern among many researchers, including in educational discipline. Potentially, competencies can influence productivity of workplace and national sustainability development through education sector. The sustainability of every development sectors is in the hands of new career workers and students (Mairers, n.d., p. 212). Thus, many studies explore characteristics, styles and learning approaches to enhance their academic outcomes.

Millennials are regarded as generation with different characteristics. Millennials are generation who are born between 1980-2000 and currently represent influential workforce for economy and banking (Evry, n.d., p. 4). Millennials are associated by several characteristics: feel special, expect rules/regulations/enforcements, prefer working in teams, are optimistic and have high level of self confidence, are pressured, have high passion to reach and tolerate wide range of culture (Howe & Strauss, 1993). Millennials intensely engage with instant information, are social generations, cooperate

with their peers, love social events/entertainments with friends and eager to get more experiences (Evry, n.d.). Millennials are defined by their mindset of computers as no longer technology, reality is not reality, doing is better than knowing, trial and error learning, multitasking, intolerance for delay and fading border of consumer and creator (Northern Illinois University, n.d., p. 2). Millennial is also attributed as entitlement, volunteerism and technological savvy generation (Brown et al., n.d., pp. 8–10). The embraced technology impacts on millennials' workplace attitudes: flexibility, continual learning, individualism and team orientation (Brown et al., n.d.). Millennials are shaped by technology development and tend to view technology as central thing in their life and work (KPMG, 2017, p. 4).

Scientific concern is also directed to understand what the millennials want and look for. Millennials want to know various culture, have fun with their job and get experience, honest and open communication and flexibility (KPMG, 2017, pp. 7–8). Furthermore, they need to work for social purposes, increasing socialization, mentors, success celebration, know “the big picture” and right manager (KPMG, 2017, pp. 9–10). The millennials also want to know short-term goals which are achievable, practical direction and guidance, mentorship, support services, social workplace, social commitment for community, have cutting-edge technology (Howe & Nadler, 2012).

Millenniality and Changing of Educational Landscape

The changing generation brings about several changes in education. Teaching methodology and course design should be changed to

accommodate learning demands of today's students since they are different from their seniors (Brown, Brown, & Conte, 2011, p. 41). Similarly, Oblinger and Oblinger (2005) support the changes of curriculum design to fulfill the net generation expectation, especially by incorporating technology into educational process.

Since generation Y born and is surrounded by technology, many studies explore how they can learn best using technology. For Generation Y, technology is not technology, but it is part of their life (Oblinger & Oblinger, 2005). Millennials think using information-age mindset, which are characterized by computers are not technology, TV is less preferred than internet, reality no longer real, doing rather than knowing, nintendo over logic, multitasking method, typing better than handwriting and prefer connectivity, zero tolerance for delay and consumer-creator blurring (Frاند, 2000, pp. 16–18). This mindset becomes the impetus for our higher education transformations.

Higher education needs to accommodate the new students' expectations. It should change, not only the way how teachers use technology in their classrooms, but also involves broader aspects of educational facilitation. Frاند (2000, p. 24) states that higher education should change the teaching methods by enabling new generation students to contribute their personal passion, career vision, learning experiences and sustain them over their lifetime and be capable to implement new things. Field-based research projects and building web of learning communities replacing faculty-centred lectures can be new approaches replacing

previous ways (Frاند, 2000, p. 24). Since millennials prefer experiential and interactive learning approaches, Phillips and Trainor (2014) introduce flipped classroom to support students' active learning and information hunters. Teachers should also allow them to interact with computer and internet on their daily basis for expressing themselves, exploring learning materials, mediating peer teaching and communication (Camillo, 2010, p. 10). Using technology in classroom in forms of online games, blogging, social networking sites may attract the millennials attention (Alexander, 2012, p. 1). Pedagogical adaptation, including increased clarity of tasks and course format, more classroom collaboration, stress reduction through pre-course planning and concern on learning ethics, should be taken into account in higher education learning (Wilson & Gerber, 2008). Specifically, Erlam, Smythe and Wright-St Clair (2018) suggest simulation as an example of teaching approach suits to the millennials' characteristics of needing supportive learning environment, communication, facilitator and team work oriented. Discussions and projects in small groups, presentations, debates, learn to serve, field experiences, critiques among peers, simulations and observing cases are suggested as effective learning methods (Kotz, 2016, p. 1165).

Several studies indicate that it is inadequate to change pedagogically only. Other areas of education are also impacted. Different life experiences may cause different behavior inter-generationally (Kersten, 2002). This also impacts on teacher-student relationship and inter-generational communication (Gibson, 2009) and faculty-student relationship (Mitchell, 2012). Teachers'

incapacity to join the inter-generational communication styles may lead to conflict between teachers and millennial students. Harmonious communication and relationship between Generation X and Y may not only result in engaged and live classroom, but also productive workforce (Robinson, 2012). Successful inter-generational communication can be reached by understanding varied perspectives among different generation, then create unique solutions (Cran, 2005, p. 38). Several millennials' communication characteristics influencing classroom strategies are giving some times to create their own goals and planning, allow them to express their balanced work-life, give chance to ask, invite them as team players, give constructive messages, allow them to express their creative alternative, express clear expectations, give structure, set roles and give respect (Gibson, 2009, p. 38).

Learning environment aspect is also affected. Many studies indicate that millennials need to learn using technology (Gibson & Sodeman, 2014; Jenzabar, 2010; Papp & Matulich, 2011; Rodriguez, Ajjan, & Honeycutt, 2014). Learning spaces should be resigned to accommodate the needed technology and collaborative learning (Maloney, Imumorin, & Bauerle, 2006, p. 3). The millennials' needs and interests also direct today's teachers to understand their students' characteristics and wide-gained knowledge through various online media (Towle & Breda, 2014; Waters, 2009). This also impacts on teachers' changing roles and knowledge/skills upgrading.

Teachers and The Millennials

As key person in education, the educational changing attracts teachers to change. Schools

and higher education are responsible to provide current teaching up dating with today's students (Waters, 2009). In general, teachers should equip themselves with various knowledge for supporting learning: knowledge of curriculum and subject matter, knowledge of teaching and knowledge of learners and learning social context (Darling-Hammond, 2006). Teachers can achieve these knowledge through continuous learning from diverse sources, including mentoring, practice and collaboration, research, reading and professional contribution, professional activities, courses, programs and other learning programs which mediated by reflective practice (Cosán, 2016, p. 15). Apparently, the millennials' technological mindset pushes teachers to learn up dated technology, adopt digital knowledge management/sharing and be more flexible (CERI, 2008). The 21st century teachers are featured by implementing learner-centred management, viewing students as producers, keeping pace with new technology, going global, using smartphones for teaching, going digital, collaborating, connecting, classroom twitting, project-based learning, creating digital footprint, coding, innovating and learning continuously (Palmer, 2015).

Teachers should also change their traditional mindset. Previously, teachers have knowledge power as they are the primary source of knowledge for their students. Today, it does not work anymore. Teachers are close mentors, parents, motivators and communicators for the millennials (Eckleberry-Hunt & Tucciarone, 2011). Working with technology, defining certain professional behaviours as expected by millennials, mentoring and communication are several challenging areas of educating

generation Y (Eckleberry-Hunt & Tucciarone, 2011, p. 459). Similarly, Bickham, et. al. (n.d.) believe that teachers' power today is dependent on their certified computing skills. Besides acquiring computing skills, today's teachers should change their teaching preferences by focusing on collaboration, connection and social change encouragement (Pinder-Grover & Groscurth, 2009). Raines (2002, cited in Jonas-Dwyer & Pospisil, 2004, p. 198-199) mentions that teachers should also adapt their classroom/teaching behavior to the characteristics or demands of their millennial students, including displaying role modeling behavior, challenging students, encouraging students to work together, inserting humour, respecting students and providing flexible learning environment. Moreover, it is not only teachers' teaching styles which should be adapted, but also teachers' characters and personality (Kraus & Sears, 2008, p. 34).

RESEARCH METHOD

The study aims to explore several teachers' lived experience on teaching today's students at higher education level. To reach the objective, the study adopts qualitative research method. It is grounded on phenomenological research epistemology since it is concerned with our own self reflective practices and perspectives on our daily teaching experiences as teachers.

Procedure and Informants

We assume that as teachers, our responsibility is not only teaching, but also taking meaning and learning from daily experiences through reflective process. Thus, the data are gathered from our reflective written voices as teachers by employing a series of procedures. Firstly, the teachers feel

and find commonality that teaching today's students are different from previously around 5-10 years ago. Secondly, the teachers agree to reflect their teaching experience and express it in certain framework which is used as guidelines. Thirdly, together discuss the result of individual reflection. The informants are four teachers/lecturers from language and social sciences disciplines. All of them comes from the previous generations (the baby boomers and generation x). All of them are still active in teaching.

Instruments and Data Analysis

The data are collected through teachers' co-creation of reflective guideline/framework. The guideline contains several aspects which each teacher should respond. Those aspects include 1) challenges of teaching the millennials, 2) millennials' behaviors/values should be changed and 3) maintained, 4) implications on teachers' professional development, 5) the millennials' characteristics.

The data are analyzed by employing within and cross case approach and inductive analysis. The data from each informant are firstly analyzed. Secondly, they are crossed with data from other informants to get several general themes (the classifications of findings). Thirdly, each of the themes are analyzed by interpreting the meaning behind the data and linking (comparing or contrasting) to the existing research findings and theories

FINDINGS AND DISCUSSION:

The study finds that there are four main educational aspects are impacted by our today's students: online-offline teacher, environment management, negotiating

learning values and teachers' professional development. By analyzing these four aspects, we argue and suggest that teachers should not always adapt by following what the millennials want, but they should analyze and balance between following or changing their millennials' learning behavior, characters and styles.

The Impacted Educational Factors:

Online vs Offline Learning

A striking characteristic of the millennials is their high intense interaction with technology. Technology is not used as media of learning anymore, but it is already integrated in their daily life. The millennials' active technological engagement frequently poses substantial questions relating to the usage of technology, can technology teach everything to the millennials and when it is the best time to use technology in learning and when it is not.

The data show technology has limited roles/functions in facilitating the millennials' learning. This is as described by the data extracts below.

“...only cognitive learning materials and aspects can be best facilitated by technology. Reporting or complementing final result of certain learning process can be enhanced by technology. Technology can also be effective for editing, completing and revising process. However, using technology should be grounded by strong academic integrity, so that the academic result is accountable and honest, not imitation only. Technology allows the students to learn in more flexible way, in terms of time and place. But I think, learning in form of

experimentation and field study should be really conducted by the students.” (Teacher Participant 1)

“ I still remember, one day, I ask the students to write an essay on certain topic. I get really surprised and proud, that they can focus the topic on areas of trending knowledge, which I even do not know what it is about. They learn it from internet. I am thinking internet can provide them limitless information which I cannot bring to the class.” (Teacher Participant 3)

The data indicate that technology may best facilitate the millennials’ cognitive learning since internet can provide wide range of information, more than teachers. However, technology is not be primary tool for learning. It should be combined with other instruments. When the millennials learn about human and society through field social study, technology should not be supporting tool. The main tool is the students’ themselves, how they should behave, interact and understand other people. This indicates that the millennials should also acquire both the off learning skills, such as interpersonal skills in social contexts, cultural learning or metacognition as well as online learning competencies. This also indicates that in teaching millennials, today teachers should be classroom managers who facilitate the balancing roles/functions of off line and online learning. Thus, the millennials should also be taught to detach themselves from technology when it is needed and direct their attention to their real world. Effective teachers understand what their students need, select appropriate tasks, guide learning process and keep students’ motivation (Horowitz et al., 2005, p. 88). Thus, teachers

should be able to develop critical cognition on what their different generation students genuinely need, what may work for them and how to make the lesson work for the students.

Learning Environment

Learning environment is also impacted by the millennials. Many learning areas, including library, classrooms and outdoor learning spaces, are transformed or equipped with technology appliances to accommodate the millennials’ learning needs. Frequently, internet is installed in almost every learning space. Moreover, collaborative and team work learning style of the millennials are accommodated. This is as described by the following data of pictures.



Figure 1. A gazebo built in a campus park, usually used by students to learn while relaxing and socializing with others.



Figure 2. A corridor inside a campus, usually used by students to learn outdoor

The data indicates that the immersed technology influences the design of physical learning environment as well as social environment. Figure 1 and 2 show in-campus physical environment changes and addition of wi-fi and plug in facilities to accommodate needs and learning styles of new millennials generations. More students engage in group learning by using internet independently, even outside the classroom or library. Thus, the millennials' students transform the traditional concept of learning spaces. Library or classroom is not the main physical learning and knowledge sources. Any places, cafes/restaurants, campus park or wi fi corners can also be effective and preferred spaces. The wider and easier internet access allows the students to learn independently, as extracted from the following data.

“The millennial generation has independent learning character. It means they get a lot from learning by themselves, especially from learning using IT. From internet, they can get complete and many references. Because of their independent character, sometimes they less concern about what their teachers say. However, they are frequently doing their task very well. So, principally, they love learning with their peer...” (Teacher-Participant 1).

“when I walk around campus areas, there are many changes now. Now, there are more chairs and tables available outdoors and equipped with plugs and electricity. Many students are working with their peers...some of them are reading, eating, relaxing and

writing...they look busy, yet happy. Many of them stay at night at campus to work in groups and get free internet access...” (Teacher-Participant 3)

The data also indicates that the millennials are enjoying and comfort to learn in more open learning spaces. This openness allows them to interact and engage in their small groups. In learning, they also tend to be multitasking, chatting, reading, writing, joking, eating with their friends. This finding calls for the need to develop discipline of educational architecture to build effective learning environment. In spite of several emerging issues relating to economic, inter-generational conflict, today's students develop café/ kedai learning culture where they can learn together, are motivated, feel fresh and comfortable (Suryani & Soedarso, 2018). The technology modernizing learning environment of higher education calls for teachers to renew their roles. Being mentor, developing students' skills of managing information, inquiring and understanding, thinking critically and applying knowledge are several roles teachers can fulfill in relation to the changing learning environment (European Commission, 2014, p. 19).

Learning Value, Character and Culture

Value is the foundation of all elements of learning. It directs learning characters and how learning outcomes should be achieved. Different generation may display distinctive learning character since they are grounded by certain values and influenced by particular social and cultural contexts. The teacher-participants, who are from previous generations, perceive that their millennial students are having certain character and mentality which should be changed.

“...today’s students’ character which should be enhanced is their survival character and mentality of being strong. They are spoiled by rapid growing of technology. Life becomes easier, fast and comfortable because of technology. However, technology cannot help all the times. Social interaction, for instance, is very complex since it involves diverse people and many social aspects should be considered. Technology provides exact and calculable measures. It offers effectiveness and efficiency. Social realm is dynamics. Thus, there is striking difference between social life and technology. Life reality is frequently so much different from technology calculation. Both of them has different logic and facts. This point should be understood by the students to have realistic, operational, progressive and wise thinking and behavior” (Teacher-Participant 1).

“frequently, I am very disappointed with my today’s students, especially when I ask them to write lecture information from the white board, they come forward, bring their mobile phone and just take the picture of it. Sometimes, I let them do that, but sometimes, I ask them to write it down, instead of taking the picture. I understand that they are millennials who love efficiency, but I also want to enhance their hardworking character. It is very easy to just picturing it. I am afraid that it will make them lazy. Besides I think that writing information from lecture can increase students’ knowledge retention since they are forced to reread when they are writing.” (Teacher-Participant 3).

The data indicates that the students’ technological engagement also affects their learning behavior. The values of efficiency and effectiveness may lead to lazy and instant characters. The teachers think and feel that the students should acquire characters of diligent and hardworking. The copy and paste culture is also considered as endangering culture. The students’ instant learning behavior also frequently ignites intergenerational conflict between the teachers and their students. However, the teacher-participants are also conveying that not all their students’ characters should be changed. Some of them should be maintained, even enhanced. Creativity, innovation, curiosity, social awareness and spirited technological learning are several characters which the teacher participants perceive relevant to fruitful education. Teachers should be able to examine their own cultural assumptions and connect to their students’ values through students’ background inquiring process (Banks et al., 2005, p. 243).

Teachers’ Development

The changing of generation impacts not only the way teachers teach and how environment should be designed, but also teachers themselves. Teachers should not only continuously upgrade their content knowledge, but also are ready and welcome recent changes. This implies that teachers should also ready to revise and reconstruct their mentality, values and characters. One of striking changing construct is teachers’ roles in education.

“...teachers/lecturers are not everything now. They are not the primary source of knowledge and skills. They become

partners and supervisors, when the students learn independently by exploring various learning media/tools and when they find difficulties.” (Teacher-Participant 1)

“...educators are responsible to keep the pace with the fast development of knowledge and skills. The students can widely access knowledge and skills outside classrooms. Classrooms are not the only learning place anymore. Today’s class equipped with chairs, table, LCD, can possibly disappear in the future. Even currently, there are more learning systems using online mode. The Ministry of Higher Education also assigns higher education institutions to innovate their online learning systems and it becomes one of several accreditation requirements. Obviously, in the future the e-learning systems will flourish, the teachers and students do not have to meet face to face to learn.” (Teacher-Participant 1)

The data indicates that teachers’ role is not as the knowledge reservoirs anymore, instead the teachers are becoming learning facilitators, managers and assemblers. It is not enough for teachers to fulfill a single role of teaching only. Today, they are expected to do multitasking of learning, teaching, reflecting, researching, managing, regulating, supervising and partnering. This complexity requires the teachers to continuously learn and re-learn more than subject matter, but also other impacted areas. These are including the learners’ knowledge (characteristics, needs, motivation, behavior, values, culture, satisfaction), the social-cultural context of learning (the dynamics of society, industrial era, knowledge trending,

popular and traditional culture, globalization, changing surrounding technology), systems (bureaucracy, leadership, organizational culture, ethics, rules and procedures). Thus, teaching the millennial students requires teachers to be multi-learners. Teachers should develop comprehensive understanding on diversity of their learners, particular repertoire of tools and acquiring professional knowledge for arriving at their decisions concerning to their learners (Darling-Hammond, 2006, pp. 80–85).

Changing or Adjusting?

Education is dynamic is dynamic process. It involves process of maintaining, adapting, enhancing and changing. The changing technology and generation calls for inevitable changing in teaching approaches, learning environment, learning behavior, culture and teachers’ development. However, the changing should be filtered. Several today’s students’ characteristics are supporting their fruitful education, some may impede. It is part of teachers’ responsibility to select and wisely decide which approaches and knowledge/skill the students should explore, acquire, construct and develop, which is relevant and be aligned to life requirement, job employment and curriculum. Education is the matter of seeking relevance which involves negotiating process among many influential aspects: learners’ identity, parent, teacher and student generation, learners’ need, school systems (Groome, n.d.). Moreover, students are entering higher institution to be better human. This implicates that higher education should provide meaningful changes. Schools are expected to change children’s ineffective emotional-cognitive learning and behaviour and bring social improvement (Hangreaves,

Earl, & Ryan, n.d.). Teachers are the most influential figures and changing drivers in classrooms. Teachers are the most vital agents which will enable changes within the educational systems (Constantinescu, 2013, p. 1439). Frequently, outside changes will not induce learning changes, unless the teachers intend to welcome and accept changes. The old teaching model cannot create a knowledge-based society which requires cognitive advancement to support employment and life (Darling-Hammond, 2006, p. 9). Teachers should be adaptive experts (Bransford, Brown, & Cocking, 1999; Hatano & Inagaki, 1986), who consistently improve their skills, knowledge and expertise to answer recent challenges (Darling-Hammond, 2006, p. 11).

The study indicates that education is process of selecting favored values, knowledge and approaches to know. Many traditional and cultural values should be introduced and inserted within teaching-learning process, while still being open to new knowledge, values and ways. Today's teachers have main challenges to constantly innovate their approaches and explore new borders (OECD, 2019, p. 19). Negotiation is part of learning process since knowledge is formed through the construction and connectedness (Cormier, 2008). Thus, entirely changing or just adjusting is not sufficient. Compromising, negotiating and being in middle ways are needed.

CONCLUSIONS

The students changing generation is an inevitable social phenomenon in academic setting. Frequently, teachers will teach different students as the semester and student generation are changing. This constant

changes and dynamics drive teachers to always adapt to different students and developing new curriculum. Thus, teachers should persistently negotiate and compromise, including within millennial era. The study indicates that teachers should not always follow what the millennial students' want, but they should be wisely select what they should follow or change and maintain. There are several factors impacted by the millenniality and drive teachers to negotiate. Those are the online vs off line learning nature, learning environment management, learning value, character and culture and teachers' development.

REFERENCES

- Alexander, A. (2012). *Understanding and meeting the needs of the millennials in the classroom: A literature review* (Graduate Research Paper). University of Northern Iowa.
- Banks, J., Cochran-Smith, M., Moll, L., Richert, A., Zeichner, K., LePage, P., McDonald, M. (2005). Teaching diverse learners. In *Preparing teachers for a changing world. What teachers should learn and be able to do* (L. Darling-Hammond & J. Bransford (Eds.), pp. 232–274). San Francisco: Jossey-Bass.
- Bickham, M., Bradburn, F., Edwards, R., Fallon, J., Luke, J., Mossman, D., & Van Ness, L. A. (n.d.). *Learning in the 21st century: Teaching today's students on their terms*. IEAB (International Education Advisory Board).
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (1999). *How people learn: Brain, mind, experience and school*.

- Washington DC: National Academy Press.
- Brown, C. J., Brown, L. J. H., & Conte, R. (2011). Engaging Millennial college-age science and engineering students through experiential learning communities. *Journal of Applied Global Research*, 4(10), 41–58.
- Brown, S., Carter, B., Collins, M., Gallerson, C., Giffin, G., Greer, J., ... Richardson, K. (n.d.). *Generation Y in the workplace*. The Bush School of Government & Public Service, Texas A & M University.
- Camillo, A. (2010). *Exploring the relationship between using gaming approaches and student attitudes and achievement with millennial students* (Seminar Paper). University of Wisconsin-Platteville.
- CERI. (2008). 21st century learning: Research, innovation and policy directions from recent OECD analyses. *21st Century Learning: Research, Innovation and Policy. Directions from Recent OECD Analyses*, 1–12. Organisation for Economic Co-Operation and Development.
- Constantinescu, M. (2013). Attitude and change in education. *Procedia-Social and Behavioural Sciences*, 93, 1438–1440.
<https://doi.org/10.1016/j.sbspro.2013.10.059>
- Cormier, D. (2008). Rhizomatic education: Community as curriculum. *Innovate: Journal of Online Education*, 4(5, article 2). Retrieved from <https://nsuworks.nova.edu/innovate/vol4/iss5/2>
- Cosán. (2016). *Framework for teachers' learning*. Retrieved from www.teachingcouncil.ie
- Cran, C. (2005). *Generations at work: The sideroad: Practical advice straight from the expert*. Retrieved from www.sideroad.com/Human-Resources/generation-at-work.html
- Darling-Hammond, L. (2006). *Powerful teacher education. Lessons from exemplary programs*. San Francisco: John Wiley & Sons, Inc.
- Eckleberry-Hunt, J., & Tucciarone, J. (2011). The challenges and opportunities of teaching “Generation Y.” *Journal of Graduate Medical Education*, 408–461.
- Erlam, G., Smythe, L., & Wright-St Clair, V. (2018). Action research and millennials: Improving pedagogical approaches to encourage critical thinking. *Nurse Education Today*, 61, 140–145.
<https://doi.org/10.1016/j.nedt.2017.11.023>
- European Commission. (2014). *High level group on the modernisation of higher education* (pp. 9–63) [Report to the European Commission on New modes of learning and teaching in higher education]. Luxembourg: Publications office of the European Union: The European Union.
- Evry. (n.d.). *Whitepaper. Engaging the Millennials*. Retrieved from evry.com/innovationlab
- Frاند, J. L. (2000). *The information-age mindset. Changes in students and implications for higher education*. Educase Review.

- Gibson, L., & Sodeman, W. A. (2014). Millennials and technology: Addressing the communication gap in education and practice. *Organizational Development Journal*, 63–75.
- Gibson, S. E. (2009). Enhancing intergenerational communication in the classroom: recommendations for successful teacher-student relationships. *Intergenerational Communication*, 30(1), 37–39.
- Groome, H. (n.d.). "Education: The search for relevance" in *Aboriginal studies: Windows on indigeneous Australia*. Adelaide: Reader, University of South Australia Press.
- Hangreaves, A., Earl, L., & Ryan, J. (n.d.). *Schooling for change: Reinventing education for early adolescents*. London: Falmer Press.
- Hatano, G., & Inagaki, K. (1986). Two courses of expertise. In *Child development and education in Japan* (in H. Stevenson, H. Azuma & K. Hakuta (Eds.)). New York: Freeman.
- Horowitz, F. D., Darling-Hammond, L., Bransford, J., Comer, J., Rosebrock, K., Austin, K., & Rust, F. (2005). Educating teachers for developmentally appropriate practice. In *Preparing techers for a changing world. What teachers should learn and be able to do* (L. Darling-Hammond & J. Bransford, pp. 88–125). San Fransisco: Jossey-Bass.
- Howe, N., & Strauss, W. (1993). *Millennials rising: The next greatest generation*. New York: Vintage Books.
- Howe, Neil, & Nadler, R. (2012). *Why generations matter*. Retrieved from www.lifecourse.com.
- Jenzabar. (2010). *Teaching with technology*. Retrieved from www.jenzabar.com
- Jonas-Dwyer, D., & Pospisil, R. (2004). *The millennial effect: Implication for academic development*. HERDSA.
- Kersten, D. (2002). Today's generation faces new communication gaps. *USA Today*, 1–3.
- Kotz, P. E. (2016). Reaching the millennial generation in the classroom. *Universal Journal of Educational Research*, 4(5), 1163–1166. <https://doi.org/10.13189/ujer.2016.040528>
- KPMG. (2017). *Meet the Millennials*. Retrieved from kpmg.com/uk
- Kraus, S., & Sears, S. (2008). Teaching for the millennial generation: Student and teacher perceptions of community building and individual pedagogical techniques. *The Journal of EffectiveTeaching*, 8(2), 32–39.
- Maiers, M. (n.d.). Our future in the hands of millennials. A Commentary. *J. Can Chiropr. Assoc.*, 61(3).
- Maloney, M., Imumorin, I., & Bauerle, C. (2006). Teaching millennial science students in the (Bio) Informatics age. *Faculty Resource Network Journal*, November 17-18. Retrieved from <http://www.nyu.edu/frn/publications/millennial.student/network-journal/>
- Mitchell, A. (2012). Understanding generational gaps to improve faculty-student relationships. *Teaching and Learning in Nursing*, 7, 98–99. <https://doi.org/10.1016/j.teln.2012.01.003>
- Northern Illinois University. (n.d.). *Millennials: Our newest generation in higher education*. Retrieved from

- facdev@niu.edu;
www.niu.edu/facdev
- Oblinger, D. G., & Oblinger, J. L. (2005). *Educating the Net Generation*. Retrieved from www.educause.edu/educatingthenetgen
- OECD. (2019). *OECD Work on education & skills*.
- Palmer, T. (2015). *15 characteristics of a 21st-century teacher*. Retrieved from www.edutopia.org
- Papp, R., & Matulich, E. (2011). Negotiating the deal: Using technology to reach the millennials. *Journal of Behaviour Studies in Business*, 1–12.
- Phillips, C. R., & Trainor, J. E. (2014). Millennial students and the flipped classroom. *Proceedings of ASBBS Annual Conference, 21 no. 1*, 519–530. Las Vegas.
- Pinder-Grover, T., & Groscurth, C. R. (2009). *Principles for teaching the millennial generation: Innovative practices of UM Faculty*. CRLT (Centre for Research on Learning and Teaching), University of Michigan.
- Ramsden, P. (1992). *Learning to teach in higher education*. London: Routledge.
- Robinson, S. (2012). Millennial workforce: Communicating and multitasking. *International Journal of Management & Information Systems*, 16(4), 307–316.
- Rodriguez, M., Ajjan, H., & Honeycutt, E. (2014). Using technology to engage and improve millennial students' presentation performance. *Atlantic Marketing Journal*, 3(2, article 3), 16–32.
- Suryani, A., & Soedarso. (2018). Should we move our classes to “McD”? The impacts of learning environment and culture on learning process and behaviour. *Proceeding Quality Improvement Innovation in ELT, 1*, 265–271. Malang: Universitas Muhammadiyah Malang.
- Towle, A., & Breda, K. (2014). Teaching the millennial nursing student: Using a “flipping the classroom” model. *Nursing and Health*, 2(6), 107–114. <https://doi.org/10.13189/n.h.2014.020601>
- Waters, C. (2009). *Teaching the millennial student, adapting the learning framework for material science*. American Society for Engineering Education.
- Wilson, M., & Gerber, L. (2008). How generational theory can improve teaching: Strategies for working with the “millennials.” *Currents in Teaching and Learning*, 1(1), 29–44.