



## GENERATION TRANSITION OF MEDICAL STUDENTS

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### **Abstract**

*Generations are groups of people who are born, grow, and maintain their lives over a certain period and are considered to have the same characteristics and points of view because they are influenced by events that occurred at that time. Generations themselves are classified based on year of birth. There are four generations are Baby Boomers, X Generation, Y Generation, and Z Generation. Each generation has different learning methods, styles, and attitudes. Medical educators have developed and implemented various teaching methods to develop students' abilities more effectively and efficiently in future generations. However, there are barriers related to institutional resources, policies, and support that slow down the transition from traditional face-to-face classes to online classes. The transition itself began to be felt at the beginning of 2020, the Covid-19 pandemic caused very rapid changes, because it forced the implementation of fully online learning without face-to-face options. Students generally respond positively to the transition to online learning, but some students feel dissatisfied when learning online because they face stress and a huge workload. The end of the Covid-19 pandemic has resulted in digital transformation, such as hybrid learning and the medical learning process through mobile-based applications which makes it easier for students to learn from anywhere and at any time. It can be concluded that there are differences in learning methods, styles, and attitudes of medical students from generation to generation, this is due to the rapid development of technology and science, which makes the learning style of the current generation different from previous generations.*

**Keywords:** transition, generation, medical students

### **INTRODUCTION**

The existence of technology has caused rapid changes that have become the basis for the emergence of new lifestyles. These changes have caused humans born in different periods to have different personalities, views, and values. Changes that occur in the economic, cultural, and political fields greatly influence individual perceptions, hopes, and points of view. As a result of these changes, generations give birth to different views of the world. The boundaries of generation periods are marked and their characteristics are determined.<sup>1</sup>

Understanding generational phenomena and their chronological differences and generational characteristics is important because different generations have different characteristics and are separate from each other and live side by side.<sup>2</sup>

Each generation has different learning methods and styles. The use of traditional learning methods is no longer suitable for use with the current generation, and vice versa, the current generation's learning methods are not suitable if used with people from different generations and do not adapt to the current generation's technological developments and advances.<sup>1,3</sup>

Medical educators have developed and implemented various teaching

methods to develop students' abilities more effectively and efficiently in future generations.<sup>4</sup> However, there are barriers related to institutional resources, policies, and support that slow down the transition from traditional face-to-face classes to online classes.<sup>5</sup>

Starting in early 2020, the COVID-19 pandemic caused rapid changes in this field, as it forced the implementation of fully online classes from home without any face-to-face options. This transition to online learning can be seen as a newly introduced educational intervention in the pre-clinical curriculum, where the majority of learning occurs through face-to-face lecture-based teaching.<sup>6</sup>

In Indonesia, the learning transition process during the COVID-19 pandemic fully follows the implementation guidelines contained in the regulation of four ministers, including the minister of Education and Culture, Minister of Religion, Minister of Health, and Minister of Home Affairs Number 05/KB/2021, Number 1347 of 2021, Number HK.01.08/MENKES/6678/ 2021, Number 443-5847 of 2021.<sup>7</sup>

Learning style is an important aspect that needs attention regarding the learning transition process because learning style consists of an attitude of accepting learning and an attitude of responding to various things related to learning.<sup>8</sup> Therefore, it is necessary to look at the transition of learning, learning styles, and attitudes of students from generation to generation, from face-to-face to online activities, and from online to face-to-face again, especially for medical students.

## LITERATURE REVIEW

### Generation Concept

A generation, from a biological perspective is the period starting from a person's birth until the time when that person has offspring. Generations are the events and conditions that each of us experiences during our formative years that determine who we are and how we view the world. As a result of these events and conditions, each generation has adopted its own “generational personality”. Meanwhile, generations are groups of the same age and have experienced or will experience similar life experiences in the years they have shaped their lives.<sup>2,3,8</sup>

The term generation based on these various definitions can be interpreted as a group of people who are born, grow, and maintain their lives over a certain period, and are considered to have the same characteristics and points of view because they are influenced by events that occurred at that time. The generational classification defined by experts refers to the many historical events and their different impacts on each other. Some experts reach agreement on the chronological classification of the generations, while others disagree on the total number of generations.<sup>3</sup>

Table 1. Classification of generation groups

Generation	Year of birth
Baby Boomers	1946 - 1964
Generation X	1965 - 1979
Generation Y	1980 - 1994
Generation Z	1995 - 2012

## Baby Boomers Generation

The Baby Boomers generation, estimated to have been born between 1946 and 1964, consists of approximately 1 billion babies born immediately after World War II. The Baby Boomers generation was born when several social, cultural, political, and economic events changed the world, causing this generation to have different characteristics from other generations. The Baby Boomer generation is individualistic, selfish, and competitive and believes in perseverance and sacrifice to start the workaholic movement.<sup>3</sup>

The Baby Boomer generation, a solid generation, intends to hold onto their courage. The basic rule of life for them is 'live to work'. By its characteristics, the Baby Boomer generation believes in the importance of teamwork in achieving personal goals even though they have to compete in the business world. For the Baby Boomers Generation who are idealistic and always aim to be more successful than expected, a perfect career and efforts to ensure this career are very important.<sup>3</sup>

## Generation X

Generation X is estimated that they were born between 1965 and 1979. Generation The older generation sees them as a lost, destroyed, and even outcast generation. The generation is between two brilliant generations who are considered a transitional generation between the old generation that remains loyal to tradition and the new generation that follows technology. The older generation sees them as a lost, destroyed, and even outcast generation. Generation X has a less competitive nature, temperament, apathy, independence, independence and a lack of enthusiasm for learning which results in low test scores causing high levels of crime and suicide as well as substance abuse.<sup>1</sup>

Compared with previous generations, they are more independent and skilled because they grew up with less attention from their parents. They tend to orient themselves as a transitional generation. This generation, born into a changing World, is more likely to question authority than their parents. The generation, that learned to tolerate diversity due to changes in the world and acquired more creativity as they grew up in a more limited environment than the generations that followed, consists of people who can analyze the situations they face, finding it easy.<sup>3</sup>

## Generation Y

Generation Y or what is known as the Millennial generation is a group born between 1980 and early 1990. This generation is a generation that grew up along with the development of technology such as appearances on television, video games mobile phones, and the internet. This generation prefers to pursue something independent and is more confident, multitasking, and optimistic. They are the first generation to use e-mail, short messaging systems, and mobile phones since childhood and adolescence.<sup>8-10</sup>

Generation Y can think more globally than other generations because they were born in a globalized world. They respect race, gender, ethnic origin, cultural values, and other sexual preferences. Another characteristic of Generation Y is that they want whatever work they do to be fruitful and different. When they are determined and independent, they have high motivation. They can focus on more than one job at the same time because they are used to taking part in more than

one course or activity as a child-centered family.<sup>3</sup>

### Generation Z

Generation Z refers to the generation born from 1995 to 2012. Generation Z has experienced the global recession, global warming issues, and the rise of mobile devices. This generation is driven by various motivations, learning styles, characteristics, skills, and social concerns from previous generations. Generation Z prefers to see colorful images and only reads less than 20% of text. 43% of Generation Z teenagers want to learn using the Internet, 38% are more likely to use mixed methods and 16% are more likely to use books to learn.<sup>11</sup>

If we refer to the sociology of Generation Z which is more dependent on digital technology, the use of virtual tools can help attract students' interest in learning. Generation Z also seems less interested in interacting face-to-face. Instead, they enjoy virtual interactions. They prefer to be in the room compared to playing outdoors.<sup>11</sup>

Each generation has a different background, especially in terms of technological developments. This makes the learning styles of each generation different. Several studies note that differences in behavior, motivation and learning approaches are important in generating enthusiasm for learning in students.<sup>11</sup>

### Transition Concept

In the Kamus Besar Bahasa Indonesia (KBBI), the transition is "a transition from a state, place, action, etc. to another."<sup>12</sup> The transition has the meaning of a change process that occurs gradually and continuously with structured character changes and requires good management throughout the transition period itself.<sup>4,13</sup> Transition has the psychological nature of accepting changes in new situations that are not uniform and not deterministic, namely the scale of change and the period that occurs have large differences.<sup>13</sup>

### Learning Transition During The Pandemic

Starting in early 2020, the Covid-19 pandemic caused very rapid changes, because it forced the implementation of full online classes without face-to-face options.<sup>4</sup> The world of medical education is one of the areas affected by Covid-19. Universities around the world are returning students to their regions and countries of origin. Pre-clinical education in the form of face-to-face lectures, small group discussions, and laboratories was stopped and changed to online-based distance learning. COASS education, which requires students to study at the Teaching Hospital, has been temporarily suspended. Teleconferencing applications such as Zoom and Google Meet are used by lecturers to teach students.<sup>6</sup>

Learning at home has a better impact because learning in the family is a very effective stimulus for developing lifelong learning in students.<sup>14</sup> A rapid transition toward the development and implementation of online teaching programs has proven to be feasible and acceptable to key stakeholders. Not only content but student involvement and a supportive environment for students and lecturers are important requirements in the context of online learning programs.<sup>6</sup>

The learning success increases while online and students feel satisfied while participating in online learning. Virtual learning offers many benefits not found in conventional systems, such as broad accessibility from anywhere and at any time, asynchronous discussions with classmates, immediate feedback on tests, and flexibility. Many educational institutions implemented online learning using

mobile-based applications which increased student satisfaction during online learning due to the pandemic.<sup>4,15</sup>

Online learning has several advantages, namely: 1) the learning process can be carried out without being limited by the need for teachers and students to be in the same space and time, 2) the use of communication and information technology as a learning medium results in lower costs for both education providers distance as well as students and 3) teaching materials and various interactions in written form that are packaged digitally enable students to be able to re-read the information recorded therein again and again.<sup>16</sup>

Meanwhile, the weaknesses of distance education methods include: 1) the lack of direct contact between teachers and students slows down the process of building social relations and values which are the basic goals of education, 2) low control over the learning process as an implication of independent learning methods. become the emphasis of distance education and 3) the limitations of communication and information technology which cannot completely replace the direct communication and interaction processes that occur in conventional education.<sup>16,17</sup>

Utilizing an online learning system is one effort that can be made to overcome problems and make it easier for students to access lecture material, communicate and discuss with each other online, as well as obtain tutorial sharing assistance from lecturers available on the online learning system. The online learning system can optimize interaction between lecturers and students through discussion forums in the media. Lecturers and students must play an active role in learning. Students must learn and be active, while lecturers must increase creativity and innovation in teaching.<sup>16,18</sup>

The implementation of online learning methods based on mobile applications can provide ease of learning from anywhere and will have more potential if used as a complement to traditional teaching. However, despite the benefits of virtual learning, its implementation is very challenging, especially in medical schools with various complex learning processes.<sup>19,20</sup>

Medical education always involves three interrelated value aspects, namely cognitive, affective, and psychomotor. Medical education often requires adequate clinical exposure and practice. In principle, medical skills cannot be completely replaced virtually. As a result, reduced exposure to the direct application of medical skills will ultimately reduce student exam performance, student self-confidence, and overall student ability as doctors in the future.<sup>4,18</sup>

Online learning has quite a complex impact on the learning process where online learning always depends on internet connectivity. If internet connectivity is problematic then students cannot attend lectures properly and it also makes students lazy and less motivated to study so students use their lecture time incorrectly. open social media.<sup>4,18,21</sup>

Implementing online learning in the COVID-19 pandemic era can increase problems in students' psychological conditions. In the period before online learning was implemented, the most psychological problems experienced by medical students were anxiety, depression, and stress. The medical students who had mental health problems experienced an increase after the pandemic compared to before the COVID-19 pandemic, especially in early April when the government started implementing policies to break the chain of spread. Covid-19, this increase



occurred especially in symptoms of depression, anxiety, and stress in students.<sup>21,22</sup>

Online learning can be an alternative approach to increase students' knowledge and practice of medical skills, especially amid the COVID-19 pandemic. However, further consideration of student attitudes and satisfaction is mandatory to achieve appropriate competency as a future general practitioner.<sup>20</sup>

### **Learning Transition In The Post-Pandemic Period**

The world has changed dramatically after the COVID-19 pandemic and requires a better understanding of the lives and worldviews of the types of students who use online learning in their learning process. The COVID-19 pandemic resulted in significant adaptations to teaching in medical schools, with an emphasis on digitalization; for example, e-learning platforms, virtual training, and videoconferencing have become established strategies for teaching students and others studying in the medical field.<sup>15,18</sup>

Apart from the positive impacts, according to research, there is an increase in stress, anxiety, and difficulty concentrating in online learning. This shows that the obstacles in online learning are not only technological challenges and material delivery but also challenges to social and affective aspects. There is a significant influence on changes in learning attitudes during the learning transition during the pandemic and post-pandemic. This is due to the influence of changes in the learning environment.<sup>13,23</sup>

Therefore, encouragement is needed to be more proactive in preparing for digital transformation and addressing the digital transformation of education as one of the main concerns. It is necessary to consider how students can manage and master the digital future during the education process. To optimize the proportion of digital transformation opportunities in education, society, and government need to work together to create a smart and qualified workforce as well as the right technology and facilities. Because if only one party participates, there will only be challenges that will result in limitations in their education.<sup>13,15</sup>

### **CONCLUSION**

It can be concluded that there are differences in learning methods, styles, and attitudes of medical students from generation to generation, this is due to the rapid development of technology and science, which makes the learning style of the current generation different from previous generations. These differences can be seen in the way lectures are conducted, virtual organ mannequins, and the ease of accessing scientific developments through online journals.

Generations are groups of people who are born, grow, and maintain their lives over a certain period and are considered to have the same characteristics and points of view because they are influenced by events that occurred at that time. The generational classification defined by experts refers to the many historical events and their different impacts on each other.

Classification of generational groups is based on year of birth, of which there are four generations, namely Baby Boomers, Generation X, Generation Y, and Generation Z. The Baby Boomers generation was born when several social, cultural, political, and economic events changed the world, causing this generation to have different characteristics from other generations. The Baby Boomer generation is individualistic, selfish, and competitive.



Generation The older generation sees them as a lost, destroyed, and even outcast generation. Generation Y is a generation that grew up with the development of technology such as appearances on television, video games mobile phones, and the internet. This generation prefers to pursue something independent and is more confident, multitasking, and optimistic.

Generation Z is a generation that has experienced a global recession, global warming issues, and the rise of mobile devices. This generation is driven by various motivations, learning styles, characteristics, skills, and social concerns from previous generations. Generation Z prefers to see colorful images and only reads less than 20% of text. 43% of Generation Z teenagers want to learn using the internet, 38% are more likely to use mixed methods while 16% are more likely to use books to learn.

Each generation has a different background, especially in terms of technological developments. This makes the learning style of each generation different and there is a transition between generations who have different learning styles. Medical educators have developed and implemented various teaching methods to develop students' abilities more effectively and efficiently in future generations. However, there are barriers related to institutional resources, policies, and support that slow down the transition from traditional face-to-face classes to online classes.

The transition has the meaning of a change process that occurs gradually and continuously with structured character changes and requires good management throughout the transition period itself. The transition itself began to be felt at the beginning of 2020, the Covid-19 pandemic caused very rapid changes, because it forced the implementation of fully online learning without face-to-face options.

Online learning can be an alternative approach to increase students' knowledge and practice of medical skills, especially amid the COVID-19 pandemic. The end of the pandemic has resulted in several transformations in the world of education, such as hybrid learning where half of the learning is carried out on campus and the other half is online. Hybrid learning is viewed positively by students. Higher education institutions must develop plans to increase student engagement and enhance academic integrity.

Therefore, encouragement is needed to be more proactive in preparing for digital transformation and addressing the digital transformation of education as one of the main concerns. To optimize the proportion of digital transformation opportunities in education, society, and government need to work together to create a smart and qualified workforce as well as the right technology and facilities.

## REFERENCES

1. Bako M. 2018. Different Leadership Style Choices, Different Generations. *Prizren Soc Sci J*, 2: 127–143.
2. Lancaster LC, Stillman D. 2009. *When Generations Collide: Who They Are, Why They Clash. How to Solve the Generational Puzzle at Work*. United States: HarperBusiness.
3. Berkup SB. 2014. Working with generations X and Y In generation Z period: Management of different generations in business life. *Mediterr J Soc Sci*, 5:



- 218–229.
4. Kim DH, Lee H jeong, Lin Y. 2021. Changes in academic performance in the online, integrated system-based curriculum implemented due to the COVID-19 pandemic in a medical school in Korea. *J Educ Eval Health Prof*, 18: 1-9.
  5. Arditi J. 2018. Barriers and solutions to online learning in medical education – an integrative review Diane. Diane O’Doherty, Marie Dromey, Justan Loughheed, Ailish Hannigan, Jason Last Deirdre McGrath, 18: 1–11.
  6. Amir Maroof Khan, Somdatta Patra PG, Sharma AK, Jain AK. 2021. Rapid transition to online teaching program during COVID-19 lockdown: Experience from a medical college of India. *J Educ Health Promot*, 10: 1–7.
  7. Kementerian Pendidikan. 2021. *Penyampaian Salinan Keputusan Bersama Menteri tentang Panduan Penyelenggaraan Pembelajaran di Masa Pandemi Coronavirus Disease 2019 (COVID-19)*.
  8. Hung KH, Gu FF, Yim CK. 2007. A social institutional approach to identifying generation cohorts in China with a comparison with American consumers. *J Int Bus Stud*, 38: 836–853.
  9. Sommer M, Fritz AH, Thrien C. 2019. Simulated patients in medical education – A survey on the current status in Germany, Austria and Switzerland. *GMS J Med Educ*, 36: 1-16.
  10. Ponder PA. 2007. You raised them, now manage them (twentysomethings in the workplace). *Human Resource Management International Digest*, 15. DOI: 10.1108/hrmid.2007.04415gad.007.
  11. Mohamed Kassim A, Mahzan Awang M, Razaq Ahmad A. 2019. The Learning Ecology of Generation X, Y And Z. 2: 167-170.
  12. <https://kbbi.web.id/>.
  13. Juliandarini J, Sudira P, Mutohhari F. 2023. Perubahan Sikap Selama Transisi Pembelajaran: Studi Eksploratif pada Pendidikan Vokasional. *J Pendidik dan Kebud*, 8: 105–119.
  14. Rotmans L and K. 2017. Transition management: Its origin, evolution and critique. *Aviat Week Sp Technol* 179: 24–25.
  15. Loda T, Erschens RS, Nevins AB. 2022. Perspectives, benefits and challenges of a live OSCE during the COVID-19 pandemic in a cross-sectional study. *BMJ Open*, 12: e058845.
  16. Patmawati, Nyono, Susetyarini RE. 2022. Analisis Pembelajaran Daring Masa Pandemi COVID-19 Pada Program Studi Pendidikan Dokter. *J Kedokt dan Kesehat*, 18: 185-195.
  17. Rondonuwu VWK, Mewo YM, Wungow HIS. 2021. Pendidikan Kedokteran di Masa Pandemi COVID-19 Dampak Pembelajaran Daring Bagi Mahasiswa Fakultas Kedokteran Angkatan 2017 Unsrat. *J Biomedik*, 13: 67.
  18. Visuddho V, Nugraha D, Melbiarta RR. 2023. Predominant aspects of knowledge and practical skills among medical students with online learning during the COVID-19 pandemic era. *Med Educ Online*, 28. DOI: 10.1080/10872981.2023.2182665.
  19. Prados-Carmona A, Fuentes-Jimenez F, de los Reyes RR. 2022. A Pilot Study on the Feasibility of Developing and Implementing a Mobile App for the Acquisition of Clinical Knowledge and Competencies by Medical Students Transitioning from Preclinical to Clinical Years. *Int J Environ Res Public Health*, 19. DOI: 10.3390/ijerph19052777.





20. Helland HK, Tylleskär T, Kvernenes M. 2022. An Abrupt Transition to Digital Teaching—Norwegian Medical Students and Their Experiences of Learning Output during the Initial Phase of the COVID-19 Lockdown. *Healthc*, 10. DOI: 10.3390/healthcare10010170.
21. Setyawati E, Subhan DH, Yusnita Y. 2021. Perbedaan status kesehatan mental mahasiswa fakultas kedokteran Universitas Yarsi Angkatan 2019 pada saat sebelum dengan pada saat pandemi Covid-19. *Semin Nas Ris Kedokt*, 2: 193-204.
22. Prameswari DC, Oktafany O, Carolia N. 2022. Gambaran Kondisi Psikologis Mahasiswa Fakultas Kedokteran Selama Pembelajaran Daring di Era Pandemi Covid-19. *Med Prof J Lampung*, 12: 139-145.
23. Lemay DJ, Bazelais P, Doleck T. 2021. Transition to online learning during the COVID-19 pandemic. *Comput Hum Behav Reports*, 4: 100130.

