FROM HIGHER EDUCATION TO HIRE EDUCATION – THE CHALLENGES AND OPPORTUNITIES OF EDUCATING GEN-Z

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Abstract
Student recruitment is a major issue for most universities and colleges. In conjunction with the percentage of graduate completion and entrance into the workforce rates these issues are playing a key role in the development and teaching of undergraduate degree programs. More and more prospective students are making decisions on where to study based on graduation rates and employability. The cohorts now entering our institutes belong to what has been termed Generation-Z (Gen-Z) and with them comes the additional challenges of engaging students who are highly global, visual, technology and socially orientated.

It is important to try to identify the key challenges that we are currently facing as well as the ones in the future with the advent of the Gen-Z student entering the gates of higher education. In addition, we will try to distinguish the soft skills needed for them to enter Industry 4.0 successfully. These encounters also offer various opportunities that can be exploited for the benefit of the various different stakeholders (students, parents, institutions, government and industry).

Keywords: Higher Education, Gen-Z, soft skills, learning by doing, formative evaluation.

1 INTRODUCTION
In the last few years’ higher education has started to undergo a major paradigm shift. The advent of digital learning into mainstream learning and teaching at the various levels of institutions has necessitated changes in how we deal with our students. Institutions are reexamining the development and teaching of their undergraduate programs as more and more prospective students are making decisions on where to study based on graduation rates and employability which is a major issue for most universities and colleges.

It is important to try to identify the key challenges that we are currently facing as well as the ones in the future with the advent of the Gen-Z student entering the gates of higher education. In addition, we will try to distinguish the soft skills needed for them to enter Industry 4.0 successfully. These encounters also offer various opportunities which can be exploited for the benefit of the various different stakeholders (students, parents, institutions, government and industry).

These challenges are also an opportunity for reflection on higher education in the 21st century. These challenges/opportunities are at all levels of the institution. For example, deciding what majors to open or close, marketing and recruitment strategies, student services, design of the learning spaces, pedagogy and more.

2 BACKGROUND
2.1 Gen-Z – Who are they?
Although there is no agreed methodology for defining when does a generation start and finish most researchers (for example [1][2][3]) place this cohort with birth dates starting somewhere in the mid-1990s and finishing in the early 2010s. Fig.1 shows a classification according to the Pew Research Centre [4]. This generalization helps to identify key factors in relation to our student population. The years are not discrete and in some countries can vary due to historical events, for example 9/11 or the end of the dictatorship in Brazil.

The name Gen-Z is becoming the accepted term but also are known as Post-Millennials, or the iGeneration (or iGen). In Japan are called “Neo-Digital Natives” with the previous cohort, the millennials or Gen-Y being called “Digital Natives”. [5]
Researchers, (for example[3][4]) into the various generational groups have noted the shortening of the generational gap from around a 20-year span to around 15 years. It is important to note that the parents of Gen-Z are mainly from Gen-X and early Gen-Y (also called Millennials). Gen-X has been called “the key around the neck generation” and the way they were brought up coupled the effects of the economic recession of 2008 and the worldwide rise in terrorism have affected the childhood of Gen-Z and their worldview.

A study conducted by The Harris Poll for Pearson [6] showed that 75% of Gen Z indicate that they have friends from different backgrounds, races and beliefs (compared to 63% of Gen-Y) and 61% agree that having diverse friends make them a better person (versus 51% of Gen-Y). In relation to Gen-Z online behavior the study that 47% spent 3+ hours a day on YouTube. Fig 2. shows their use of social media platforms as compared to Gen-Y.

Some of the key attributes of Gen-Z are:

- A diverse global base of friends.
- Money conscious.
- Entrepreneurial.
- Very collaborative.
- Tech savvy.
- Digital natives that crave friends.
- Low attention span.
- Love of learning and knowledge.
- They take responsibility for their success.
- And like any generation, they have their own language and slang. Theirs being much more visual.

In his book, *The New Generation of Students: How Colleges Can Recruit, Teach and Serve Gen-Z*, Jeff Selingo writes, “Gen-Z – shaped by the Great Recession and the reign of the smartphone and social media – marks a break from even the recent past. Today’s students are more skeptical and money conscious, interested in education they can apply and focused on the value of a degree. Technology is indispensable to them but not always a net positive, and they may need more in the way of personal development than their predecessor needed.” [8].

2.2 Gen-Z – How do they learn?

Seemiller and Grace [7] in their study of Gen-Z learners found that they like self-paced independent learning, with the instructor as a facilitator helping them develop their skills. In their study, they also found that they do have a preference for face to face encounters with their peers and instructors. Additional studies such as Pearson[6] have shown an increase from 47% to 57% in Gen-Z preferences for in-person learning activities compared to Gen-Y students. There was also a decrease from 60% to 47% in preference to using books for learning.

As mentioned in the previous section, the element of face to face encounters is important to Gen-Z and has increased in relation to Gen-Y. This is important to note, as it can help in determining the appropriate teaching and learning strategies for these students.

They are used to learning, self-educating and always learning. However, as they are working on multiple screens and inputs this has caused a shorten attention span. What is being termed “the 8-second filter”. These filters quickly sort and access information that they absorbing in a multi-tasked environment. At their fingertips is instantaneous unlimited information however their ability to process this information is finite. This learning characteristic is very important when thinking about teaching and learning strategies.

2.3 Gen-Z – What are they looking for in Higher Education?

These students picture an education that will give them the skills and knowledge they need to succeed in their chosen career path in a timely and affordable manner. They expect a high return on their investment in studying. During their studies, they anticipate seeing plenty of technology and exceptional levels of service. They envisage an academic milieu that contains an unprecedented level of personalization coupled with complete transparency.

According to a Barnes & Nobel College report [9], 87% of Gen-Z think that a college degree is important. The Pearson study [6] found that only 25% found that they can have a rewarding career without going to college. They see a college degree as a stepping stone to a career and not as an end its own right. Hence the academic performance is a critical factor in choosing an institution and major. They put in the research in order to find the optimum institution for their needs. A survey conducted by Accenture, a global professional service company, found that 88% chose a major with job availability in mind [10].
3 THE CHALLENGES

3.1 Academic Challenges

3.1.1 Pedagogy

A major challenge facing higher education is how to teach the student that used to be “learning anywhere, anytime” to one that is “learning everywhere, all of the time”. Notwithstanding, Gen-Z still value the interactions with teachers and peers even more so than Gen-Y that want the flexibility of online methodologies of learning. Pearson[6] ranked teachers and professors as the top influencers for their personal development (80%) higher than their parents and peers.

Much has been said and written about the instructor moving from the “sage on the stage” to the “guide on the side”. The movement towards active learning, problem-based learning (PBL), competency learning is indeed a direction needed to be taken with the new cohorts. However, there are caveats that should not be ignored. Firstly, we are still teaching multi-generational classes and this has to be taken into account when designing our teaching and learning strategies. In addition, as noted above, there is a very definite and valuable role for the instructor of Gen-Z students. It is important for the student to be able to sit and listen to a good lecture both in quantity and in quality. To be able to listen and analyze what is being said is an important “soft skill” (see next section) that needs to be developed by the student. The key is an engaging lecture but in order to do that the lecturer must have the tools and the expertise, which unfortunately many faculty lacks.

The instructors need to be constantly updated in technology and techniques and how to incorporate them into their pedagogy. When and how to use these techniques in a constructive manner. The instructor does not know all and is not a walking encyclopedia. With the vast amount of information on every subject being produced, it is up to the instructor to help direct the student to the most relevant information. However, the instructor must be wary of, in the slang of Gen-Z, TL:DR (Too Long:Didn’t Read or Too Lazy:Didn’t Read)

An additional challenge is their desire for the practical, the “work-ready” product and not an “academic product”. Hence the introduction of more and more competency-based education, which focuses on the mastery of work-related skills rather than the command of a particular academic discipline. When hiring faculty deans are now looking who come from industry/field, who can give that practical emphasis to their program.

Another issue is there any sort of practicum in the program? In a Barnes & Noble College report [9] on Gen-Z learners they found that 51% learn by doing (such as working through examples, using simulations), 38% by seeing (watching demonstrations, reading material) and 12% by listening (classroom lecture). This coincides with Dale’s Cone of Experience model. Dale’s model incorporates many theories related to learning and instructional design. He postulated that learners retain more by what they do as opposed to what they see or what they hear. Higher retention rates are obtained by doing.

A key issue is that of assessment and evaluation. The Gen-Z learner wants to receive feedback and criticism in a timely manner. It is critically important to incorporate formative evaluation methods into the course timeline in order for the student to fully learn the subject material. This can be done quite effectively when using an active learning based model or PBL. In addition, the use of analytic technologies has started to make their presence known in the education setting. The use of data analytics can help personalize the learning experience of the student.

A future trend is the introduction of augmented reality (AR) and virtual reality (VR) not only into our day to day life but into the educational setting. This coupled with the emergence of AI is going to be one of the major challenges in the upcoming years. We can also foresee the next generation of MOOCs that will be sensorial immersive using virtual reality.

3.1.2 Non-technical skills – Soft Skills

In the last decade, the 4 C’s has created a lot of buzz, in education, training and hiring circles. The National Education Association (NEA) published, Preparing 21st Century Students for a Global Society, an Educators Guide to the “Four Cs”, identifying four essential skills needed for students and for entry into the workplace. Table 1 summarizes the main emphasis of each skill.
Table 1. The 4 C’s in Education

<table>
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<th>Communication</th>
<th>Collaboration</th>
<th>Critical Thinking</th>
<th>Creativity</th>
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<tr>
<td>• Articulate thoughts effectively (oral, written and nonverbal)</td>
<td>• Work effectively and respectfully with diverse teams</td>
<td>• Reason effectively</td>
<td>• Think creatively: create, elaborate, refine, analyze and evaluate original ideas</td>
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<tr>
<td>• Listening effectively, communicating in diverse environments (multilingual and multicultural)</td>
<td>• Exercise flexibility and willingness in making comprises towards a common goal</td>
<td>• Use systems thinking</td>
<td>• Work creatively but understanding the real world limits to adopting new ideas</td>
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<tr>
<td>• Using media and technologies</td>
<td>• Assume shared responsibility and value the individual contributions of each team member</td>
<td>• Make judgments and decisions</td>
<td>• Implement innovation</td>
</tr>
<tr>
<td>• Sharing ideas and solutions</td>
<td></td>
<td>• Solve problems</td>
<td></td>
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<td></td>
<td></td>
<td>• Looking at problems in a new way and linking across subjects and disciplines</td>
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One can argue, that some of the “soft skills” are an inherent part of the professional development in a certain discipline. For example, an undergraduate Social Work program generally incorporates elements of group dynamics and communication skills. In software engineering problem solving is a key element in any program of instruction. However, there are those skills that have to addressed in conjunction with learning the desired discipline. In the age of competency-based learning there are also “soft” competencies that graduates need to be able to enter Industry 4.0.

In the communications skills a graduate should have the competencies to be capable of handling criticism, giving and receiving feedback; resolving conflicts constructively; capable of researching required information in order to solve a specific problem; oral and written presentation skills.

In the domain of collaboration, our graduates need to be able to work in groups/teams; to be able to accept individual cognition; interacting with stakeholders; dealing with uncertainty and ambiguity; dealing with multi-cultural environments: accept responsibility for others and joint projects.

In relation to critical thinking, it is important to note the need for helping students in acquiring the skills need to evaluate online sources and their authenticity. (see Seemiller and Grace [7]). Purcell’s[11] study of instructors found that 60% felt that their students are not competent in assessing the quality of online information and 71% responded that their students do not have the needed skills to detect bias in online information.

In the area of creativity, Sir Kenneth Robinson, a leading thinker on creativity and education, in his celebrated 2006 TED talk, “Do Schools Kill Creativity?” addresses the importance of creativity in a world of task automation and global competition said, “Creativity is as important in education as literacy and we should treat it as such”[12].

These skills have been coming increasingly important with the advent of Artificial Intelligence (AI) and Machine Learning (ML). The above skill set needs to be adapted to a world where AI is an integral
part of our lives. There is a need to find new ways to be creative in a human-AI environment, communicating to an AI where English is a second language, collaborating with machines and finally using the AI for the collection of relevant information in order for the human to be able to analyze and problem solve.

An additional realm not often mentioned is important to emphasize, professionalism. Our graduates must be able to gauge their activities and behavior according to social and ethical norms. In addition, they must be aware of and embrace correct professional conduct and codes of ethics. As mentioned in the previous section, the instructor who is a mentor can be the vehicle for helping the learner acquire these competencies.

3.1.3 Learning Spaces

As mentioned above, the pedagogy of higher education is in transition. As such, there is a need in reexamining existing learning spaces and the design of appropriate new ones.

Amongst the many questions that school administrations are now faced with are:

- How many “computer labs” are really needed on campus?
- How does an amphitheater structured classroom enhance active learning or actually deter active learning?
- How should an institution design and manage their virtual learning spaces?
- How to create spaces of different sizes and arrangements for socializing and learning outside the classroom?
- How to transform existing structures to accommodate these learners?

3.2 Administration Challenges

3.2.1 Marketing and Recruitment

Marketing and the recruitment process must start taking into account the various attributes of perspective Gen-Z students. These prospective students prize degrees that allow them to graduate quickly and find immediate employment. They do their homework and swiftly authenticate facts and figures. They expect transparency, but with that, they are also transparent and will not mind receiving personalized text/notifications. Marketing must take into account that competition is now global and not only local/regional/national.

We can identify a few major strategies which are applicable for this target population.

- **Mobile-Mobile-Mobile** – as mentioned above Gen-Z spend a high amount of time on their devices. Therefore, a digital approach to communication is important. Use social media but when using social platforms have a presence where they are like Snapchat and Instagram and less on Facebook. Notify prospective students of new videos, events happening on campus.

- **Be authentic** - use real students, real stories and conversations. Peers have a significant influence on decision making. Spend less on flashy advertising and create more opportunities to talk to current students and alumni.

- **Show not tell** – they use social video to consume content. They are very active on video channels. Video is a key element in recruiting.

- **Get to the point quickly** – Take into account the Gen-Z 8- second attention filter, meaning that there is a need to capture them in the first 8 seconds. deliver the punch line in the first 8 seconds

- **Instant communication** - They expect a higher level of customer service (see next section). Recruitment and enrolment centers must give timely responses. It must be prompt and personalized and not boilerplate responses.

- **Marketing points** – placement rates, retention rates, degree completion rates - emphasize practical skills and postgraduate success rates
3.2.2 Student Services
The Gen-Z student expect a higher level of customer service. Timelines are faster, wait times are shorter and expectations are instantaneous. There is intolerance towards lag times, both academic issues (such as grades, deferment requests, etc.) and administrative issues. Institutions need to start moving into one, mobile friendly, integrated environment containing all the LMS and administrative features needed for the student. This system has to maintain high levels of cybersecurity.

4 CONCLUSIONS
In the last decade and a half, we have witnessed digital learning in its various forms entering mainstream higher education systems. This has caused institutions to modify from a teacher centered environment to a learner centered environment. These changes are causing a major paradigm shift in teaching, learning and administration in higher education. Currently, with the arrival of the new cohorts predominantly composed of Gen-Z, these changes are even more evident. One noticeable element is the move from an “academic” product towards a “work-ready” product. As the world is transforming from a world of knowledge towards a world of skills, so does higher education need to change.
In summary, higher education does not have to be easy, but it has to be relevant.

REFERENCES