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ONLINE EDUCATION FROM THE UNITED NATIONS PERSPECTIVE IN THE TIME OF PANDEMIC AND ERA OF SUSTAINABLE DEVELOPMENT

The Objective of Education is Learning, Not Teaching.

Knowledge@wharton blog

Introduction

Almost a century ago the US educator Harry Lloyd Miller wrote: 'Learning is that mysterious process by means of which the contents of the note-book of the professor are transferred through the instrument of the fountain pen to the note-book of the student without passing through the mind of either'¹.

He meant a classical ex-cathedra lecture-style of teaching practiced for the past 6,000 years and the two tools of 'transmission pedagogy': a paper notebook with an ink pen. One century later, in the Digital Age, these utensils are more decorative than instrumental. A stylus and a tablet may replace them. However, the problem of effectively conveying the knowledge from the teacher to the student remains the same, save – perhaps – shorter nowadays learner's attention span, cognitive overload/fatigue, and the pandemic.

As if Miller's sarcastic opinion needed consolation, some 50 years later a critical review of the question of students' note-taking claimed that their 'attention span typically increases from the beginning of the lecture to 10 mi-

¹ H.L. Miller, *Creative Learning and Teaching*, Scribner Inc., New York 1927, p. 120.

minutes into the lecture and decreases after that point². Notwithstanding that the claim was not corroborated by scientific evidence, since then it has been authoritatively iterated and taken for granted that after maximum 15 minutes the students ‘tune out’^{3,4}.

Generous as this estimate may be, reportedly⁵ a longitudinal survey of Canadian media consumption by Microsoft concluded that the average attention span had fallen between 2000 (i.e. when the mobile revolution began) and 2013 from 12 to 9 seconds, next to the attention span of a goldfish (8 seconds). Interestingly, that latter figure itself was not from Microsoft’s research. Indeed, there is no idea wherefrom it came. Yet this uncorroborated assertion gained traction⁶.

Among educators not less popular, authoritative but likewise uncorroborated assertion holds that in two weeks from being confronted by information our memory retains 10% of what we read, 20% of what we heard, 30% of what we saw, 50% of what we heard and saw, 70% of what we said and wrote, and 90% of what we practice what we learned⁷. This estimate is usually credited to Edgar Dale (1900-1985). Although neither it nor the related assertion originally comes from him⁸, since his 1946 publication in which he presented the ‘Cone of Experience’⁹, it has continued to enjoy life of its own, as if it had been the author’s original statistical chart.

² J. Hartley, I.K. Davies, *Note-Taking: A Critical Review*, Programmed Learning and Educational Technology 1978, Vol. 15, No. 3, pp. 207–224.

³ M.D. Svinicki, W.J. McKeachie, *McKeachie’s Teaching Tips: Strategies, Research and Theory for College and University Teachers*, 14th edn, Houghton-Mifflin, Boston, MA, 2013, pp. 70–71.

⁴ In fact, even faster. An observation of technology habits carried out by trained students on secondary and tertiary students doing homework showed that their attention spans averaged less than 6 minutes on a task before transferring it to other digital engagements (L.D. Rosen, L.M. Carrier, N.A. Cheever, *Facebook and Texting Made me Do it: Media-Induced Task-Switching while Studying*, Computers in Human Behavior 2003, Vol. 29, No. 3, pp. 948–958).

⁵ T. Egan, *The Eight-Seconds Attention Span*, New York Times, 22 January 2016, <https://www.nytimes.com/2016/01/22/opinion/the-eight-second-attention-span.html>.

⁶ K.R. Subramanian, *Myth and Mystery of Shrinking Attention Span*, International Journal of Trend in Research and Development 2018, Vol. 5, No. 3, pp. 1–6.

⁷ There are several variations of this ‘folklore maxim’. See: L. Janoska, *What Really is the Cone of Experience? An Insight into the Cone of Experience*, <https://elearningindustry.com/cone-of-experience-what-really-is> (accessed October 23, 2021).

⁸ *Ibid.*

⁹ D.P. Subramony, M. Molenda, A.K. Betrus, W. Thalheimer, *The Mythical Retention Chart and the Corruption of Dale’s Cone of Experience*, Educational Technology 2014, Vol. 54, No. 6, pp. 3–5.

Because times have changed dramatically, the current pandemic forces educators to teach remotely, with occasional only (if any) direct face-to-face (F2F) real classroom experience, which has intensified the interest of educationists and teachers in the flipped learning (FL) and its particular features. This generates interest in the memory retention process, e.g. how memory filters FL-conveyed information, and how its content can effectively reach learners from different legal cultures in their local environment. In short, these new developments and challenges prompt one to ask how in new environments (remoteness, media, locality) during the pandemic and past it various students can effectively be ‘tuned in’ with the teacher’s remote use of commensurate pedagogical tools and skills.

With a view to arriving at some FL recommendations during and after the pandemic, this article first explains what FL is, and then briefly reviews the FL’s history and research findings relevant to implementing this type of learning.

Definition and development of flipped learning

Flipped learning is a form of ‘blended learning’¹⁰ ‘in which the conventional notion of classroom-based learning is inverted: students are introduced to the learning material before class with classroom time then being used to deepen understanding through discussion with peers and problem-solving activities facilitated by teachers’¹¹.

Origination stories of FL differ. Those who emphasize social, student-centred, collaborative, and cooperative learning that engages learners as an

¹⁰ Alias ‘hybrid learning’, is a method of teaching that integrates technology and digital media with traditional instructor-led classroom activities, giving students more flexibility to customize their learning experience. However, this text mostly focuses on a completely inversed, fully virtual learning with no real face-to-face class contact, i.e. students’ and teacher’s acceptance of this online method was forced by the pandemic, and implemented in a fixed online-class time format.

¹¹ AdvanceHE, <https://www.advance-he.ac.uk/knowledge-hub/flipped-learning>.

active and responsible part of the educational process mention Socrates as FL's precursor¹², and Alison King as its conceptualist¹³.

In my own didactic experience involving teaching the United Nations crime prevention law through the Socratic method¹⁴, the philosopher indeed inspired me as a precursor of FL, without so naming this practice. As the first criminal justice educator, yet not 'sage on the stage', he treated students not as 'a warehouse that stores knowledge' (to use this metaphor¹⁵), but as Masters of Learning, and himself as the Learner who 'guides on the side', a contemporary coach. He realized that students' cognitive potential grows much more sustainably when they themselves are actively searching for the answers to questions. Of course, at that time they did not deliver practical outputs¹⁶.

Over a long time, delivering practical transformative knowledge has become a major challenge for the universities and for the United Nations crime prevention and criminal justice education. Since the beginning of the 21st century, the increasingly easily accessible digital education technologies have made a breakthrough for flipped learning. It has then assumed that name, own identity, and format.

Most credit FL's organized development to Jonathan Bergmann and Aaron Sams. These high school chemistry teachers from Colorado (USA) started using recorded lectures in 2006. To accommodate students who missed classes, they used basic video recording software that added voice-over and

¹² J.E. Bates, H. Almekdash, M.J. Gilchrest-Dunnam, *The Flipped Classroom: A Brief, Brief History*, (in:) L. Santos Green, J. Banas, R. Perkins (eds), *The Flipped College Classroom. Educational Communications and Technology: Issues and Innovations*, Springer, Cham 2017, pp. 4–5.

¹³ A. King, *From Sage on the Stage to Guide on the Side*, College Teaching, Vol. 41, No. 1, pp. 30–35.

¹⁴ See: S. Redo, *Is Socrates Mortal? On the Impact of Socratic Logic on Teaching and Learning the United Nations Crime Prevention Law*, (in:) H. Kury, S. Redo, *Crime Prevention and Justice in 2030. UN and the Universal Declaration of Human Rights. Essays in Honour of the United Nations*, Springer, Cham 2020.

¹⁵ F. Deng, *Literature Review of the Flipped Classroom*, Theory and Practice in Language Studies 2019, Vol. 9, No. 10, pp. 1350–1356.

¹⁶ Now the method allows it (S. Redo, *Is Socrates Mortal?*, op. cit., 2020).

annotation of PowerPoint slideshow presentations accessed through electronic and online media¹⁷.

Because of the pandemic, nowadays not only a few students but entire classes, faculties and universities are disappearing from the global picture of tertiary education. Those which withstand the pandemic challenge are confronted with the unenviable task of modifying, if not of entirely converting their teaching methods from the traditional classroom to the FL format, not being sure whether it allows effective teaching.

Literature review of the teaching methods and research findings¹⁸

The collated research findings ensue from various studies. Their authors analysed different types of teaching methods. They ranged from lecturing through demonstrations to laboratory work.

The authors applied various assessment methods. Some of them were impressively refined (e.g. ANOVA – a statistical analysis of variance through repeated measurements of reactions, in this case recorded on a teacher's tablet receiving a radio signal from a clicking student rating a particular segment of the teacher's presentation), others were not less minute but also incisive, i.e. physiological – measuring their heart rate in class, or in class and out of class their 24/7 electrodermal activity. Still others were psychological, e.g. peer-trained observers recorded students' facial reactions during class and homework.

¹⁷ J.E. Bates et al., *The Flipped Classroom*, *op. cit.*, p. 5.

¹⁸ For a more systemic but somewhat dated review, see: J. O'Flaherty, C. Phillips, *The Use of Flipped Classrooms in Higher Education: A Scoping Review*, Internet and Higher Education 2015, Vol. 25, pp. 85–95.

Teaching methods

Table 1. Learning differences between traditional and flipped learning

	Traditional Classroom/F2F	Online Flipped Learning/FL
Role of teachers	Master of knowledge and class	Provider of online resource material, Instructor and Stimulator of students' networking
Role of students	Passive learner	Active learner, researcher and presenter
Teaching methods in class	Teaching in class and doing homework after class	Pre-learning before class, discussing problems online
Time distribution in class	Spending most of time in teaching	Spending most of time in discussing among students
Teaching contents in class	Teaching and imparting knowledge	Questions & Answers study
Application of teaching methods	Presenting learning contents	Autonomous learning and cooperative learning by doing
Teaching evaluation	Paper test	Evaluation through asynchronous activities (online quizzes, individual assessment of small-group presentations, including pros & cons ('dilemmatic') case studies and synchronous activities (tests, Q&As, wrap-up sessions, exam)

Source: adapted from F. Deng, *Literature Review of the Flipped Classroom*, 2019.

Research findings and observations^{19 20 21 22 23 24 25 26}

Table 2. Various pedagogical approaches and findings/observations on students' attention span

Pedagogical approach	Findings/Observations
General	There is no statistically significant difference in average performance between F2F traditional classroom instruction and FL. However, the FL format leads to a significantly larger polarization in performance: the FL quality of some students' homework is lower, while of others higher. Both may be credited to commensurate levels of motivation.
Lecture	Students' attention during F2F drifts. It is highest during participatory parts of a class, and lowest during the teacher's lecturing. Unmotivated students pay attention for an average 10-20 mins. The first and last 5 mins are inattentive. Students' retention of material (as measured by immediate testing) was highest during the last 20 mins of the lecture, when arousal (at least as determined by heart rates) was supposedly at its lowest. During a 50-minute class, information presented between the 15 mins and 30 mins time segments was recalled best, whereas material presented during the first 15 mins had the worst retention. The seating position of a student in the lecture hall had as much impact on material retention as the placement of material within the lecture.
Demonstration	Students' attention lapses significantly lower than during F2F lecture segments.
Clicker questions	Significantly fewer attention lapses to the F2F lecture after the clicker session.
Homework	Students' attention spans averaged less than 6 minutes on a task before attention shifts to other digital engagements. Students with relatively high use of study strategies were more likely to stay on-task than other students.

¹⁹ M. Zher Poh, N.C. Swenson, R.W. Picard, *A Wearable Sensor for Unobtrusive, Long-Term Assessment of Electrodermal Activity*, IEEE Transactions on Biomedical Engineering 2010, Vol. 57, No. 5, pp. 1243–1352.

²⁰ R.M. Giles, M.R. Johnson, K.E. Knight, S. Zammett, J. Weinman, *Recall of Lecture Information: A Question of What, When and Where*, Medical Education 1982, Vol. 16, No. 5, pp. 264–268.

²¹ N.A. Bradbury, *Attention Span During Lectures: 8 Seconds, 10 Minutes, or More?*, Advances in Physiological Education 2016, Vol. 40, No. 4, pp. 509–513.

²² D.A. Bligh, *What's the Use of Lectures?*, Jossey-Boss, San Francisco, CA, 2000.

²³ Ch. Stöhr, Ch. Demaziere, T. Adawi, *The Polarizing Effect of the Online Flipped Classroom*, Computers & Education 2020, Vol. 147, pp. 3–12.

²⁴ D.M. Bunce, E.A. Flens, K.Y. Neiles, *How Long Can Students Pay Attention in Class? A Study of Student Attention Decline Using Clickers*, Journal of Chemical Education 2010, Vol. 87, No. 12, pp. 1438–1443.

²⁵ L.D. Rosen, L.M. Carrier, N.A. Cheever, *Facebook and Texting Made me Do it, op. cit.*

²⁶ K. Goodwin, *Managing Attention Span in the Digital Age*, The Link 2015, Issue 2.

Research findings are unequivocal. Their majority suggest that the F2F lecture is the least effective type of imparting knowledge. The attention spans are also unequivocal, but cyclic. Students' attention is higher during non-lecture pedagogies, such as demonstrations and clicker questions. Students pay more attention to lecture segments immediately following a demonstration or a clicker question. However, the retention of knowledge improves if a lecture is intertwined by the teacher's demonstrations, quizzes/tests, students' presentations. Hence the following two remarks. First, lecturing in an FL mode is as good as the implementation of its particular segments. Second, there has been limited published evidence on student learning outcomes, particularly long-term ones, from FL approaches.

Discussion

Charles Montesquieu, whose *The Spirit of the Laws* prompted the President of the 2012 United Nations General Assembly to urge Member States to recognize that 'there is no nation so powerful as the one that obeys its laws, not from principles of fear or reason, but from passion',²⁷ perversely argued that: 'in the northern climates peoples ... have few vices, enough virtues, and much sincerity and frankness. As you move toward the countries of the south, you will believe you have moved away from morality itself: the liveliest passions will increase crime; each will seek to take from others all the advantages that can favour these same passions. In temperate countries, you will see peoples whose manners, and even their vices and virtues are inconstant; the climate is not sufficiently settled to fix them'.²⁸

In short, he argued that Southerners and Northerners were truly different in expressiveness due, in large part, to temperature variations. Indeed, psychological self-reports on basic negative emotions (anger, hostility, anxiety) from 2,963 students (69.5% female) of 26 universities in 52 South and North

²⁷ United Nations General Assembly, World Leaders Adopt Declaration Reaffirming Rule of Law as Foundation for Building Equitable State Relations, Just Societies, UNGA/11290, 24 September 2012.

²⁸ C.L. Montesquieu, *The Spirit of the Laws*, trans. and ed. by A.M. Cohler, B.C. Miller, H.S. Stone, Cambridge University Press, Cambridge 1989, p. 234.

countries – quite a vast array of legal cultures – documented²⁹ that, with some exceptions, students' self-ratings of their own expressiveness and of peer students from the other hemisphere were by and large related to their respective hemispheric origins of being from the South (more expressive) or the North (less expressive).

Moreover, there are other factors which interfere in the learning process and must be taken for granted. Among them there are climate-based effects (i.e. hours of sunlight and hours of classes – morning hours are more conducive to learning)³⁰. There are also logical, ideological and intercultural aspects of rulemaking/new standard-setting. However, they all seem not to be enough, if at all, appreciated in the learning process, and entirely absent in FL.

In the past decade (2011–2020), while teaching in the traditional settings the United Nations crime prevention law at the Vienna University (Austria), I had some 20 nationalities in class. While teaching at the University of Białystok (Poland), I had classes with Polish and Erasmus foreign students. While teaching the same at the South-Central University for Nationalities in Wuhan (China), out of 55 such local minorities, I used to teach at least a dozen students being non-Han Chinese.

In each class I noticed students' attention distracted by intermittent use of mobile phones for texting, accessing social media, etc. In China, I also often saw students falling asleep during lecture, and sleeping hard during breaks. It goes without saying that meaningful differential learning effects can occur within such groups of students in any university.

The question then arises how students – global citizens and future decision-makers – mindful of their own passions, can be sensitized in countries with various approaches to the rule of law to the UN's passion for the rule of law which is at its 'very heart'³¹? How this UN objective can be addressed

²⁹ J.W. Pennebaker, B. Rimé, V.E. Blankenship, *Stereotypes of Emotional Expressiveness of Northerners and Southerners: A Cross-cultural Test of Montesquieu's Hypotheses*, *Journal of Personality and Social Psychology* 1996, Vol. 70, No. 2, pp. 372–380.

³⁰ D.A. Bligh, *What's the Use of Lectures?*, *op. cit.*, pp. 53–54.

³¹ United Nations Secretary-General, *The Rule of Law and Transitional Justice in Conflict and Post-conflict Societies: Report of the Secretary-General*, S/2004/616, 23 August 2004, § 6.

and hopefully attained through FL without the emotional buy-in relatively easily achievable in a traditional classroom setting that enables generating students' excitement about a subject and inspiring their passion for it?

From the United Nations perspective awareness of logical, ideological and intercultural aspects of jurisdiction with its 'internal affairs' is the prerequisite of effective delivery of its 'common language of justice' in any place under the sun, whether or not verbal symbols exemplify as objects the ideas they stand for, as especially is the case with Chinese ideograms, e.g. 'justice'.

The above factors contribute to a logjam, indeed also relevant to social science teaching in the academic world. As for the United Nations world, this points to one of the many idiosyncrasies of all the languages that meet in the Organization, a place of multivalent or ambiguous logic, legal pluralism and multiculturalism which condition the UN transformative agenda³².

This is why, in the preceding section I deliberately drew on the FL observations by teachers of, inter alia, foreign languages, chemistry, engineering, and physiology, coming from very distinct places/legal cultures, and with different worldviews. It is a mix of interdisciplinary findings and observations. Some of them are systemic, others incidental, but both are to some extent generalizable and postulatory. Commensurate recommendations are listed below. They lend themselves to a rigorous scrutiny and verification through various evaluation techniques.

³² S. Redo, *United Nations Rule of Law, 'Common Language of Justice' and the Post-2015 Educational Agenda: Some Academic and Policy Aspects*, *Comparative Law Review* 2013, Vol. 16, pp. 211–246; *idem*, *Education for Succeeding Generations in the Culture of Lawfulness*, (in:) E.W. Plywaczewski (ed.), *Current Problems of the Penal Law and Criminology*, C.H. Beck, Warsaw 2016, pp. 475–500.

FL recommendations^{33 34 35 36 37}

- First, decide what students should be able to do as a result of their experiences in the course, then work backwards to pick the right content, the right learning activities, the right assessments, and the right tools.
- In higher education courses, class time should focus on knowledge application (analyse and apply).
- In the United Nations crime prevention and criminal justice education, the course time should also focus on emphasizing the moral value of its standards and norms advancing the rule of law and sustainable development.
- The structure and the level of dialogue in a course should account for the autonomy the learner should exercise. Students should learn how to manage and direct their attention to become successful learners by gradually sharing the responsibility for running the course.
- Consequently, the initial course design may undergo intermittent changes and shifts in the FL format, but should remain synchronous, active learning activities for all students to participate in them.
- Teachers need to redesign their FL curriculum so that the pre-class activities are integrated better into the online classes with active learning pedagogies so students understand the model and are motivated to prepare for class; how these resources are integrated into the overall approach is what matters.
- While a highly structured learning activity through an online lecture entails little room to exercise students' feeling of responsibility for their own learning, and risks their boredom and resilience, the effectiveness of such an activity may be enhanced by the intertwined student-centred pedagogical approaches requiring collaboration. They sustain the former, but in themselves are helpful for upholding attention span when using time monitoring and management techniques.

³³ Ch. Stöhr et al., *The Polarizing Effect of the Online Flipped Classroom*, op. cit., p. 3.

³⁴ *Ibid.*; K. Goodwin, *Managing Attention Span in the Digital Age*, op. cit.

³⁵ W. Pluta, B. Richards., A. Mutnick, *PBL and Beyond: Trends in Collaborative Learning, Teaching and Learning in Medicine* 2013, Vol. 25, No. 1, pp. 9–16.

³⁶ R. Talbert, *Fall 2020, One Week in*, <https://rtalbert.org/fall-2020-one-week-in/> (accessed October 1, 2021).

³⁷ B. Tucker, *The Flipped Classroom*, *Education Next* 2012, Vol. 12, No. 1, pp. 82–83.

- Initially, 15-minute work periods are helpful, followed by a two-minute technology break with a gradual increase in work period up to 25 minutes as students adjust. Taking regular breaks (specific and limited amounts of time to ‘check in’) keeps students’ attention sharp.
- Periodic resting can enhance task focus and short work-cycles can decrease internal resilience and boredom, providing a quick reward cycle to sustain motivation.
- Teachers can minimise digital distractions by encouraging learners to work ‘offline’ and switch-off alerts and notifications, as well as set limits on their screen-time pursuits.
- Optimise learning opportunities. Have set break times from academic work for technology use. Balance screen-time with ‘nature-breaks’, and allow ample ‘green-time’ for mind wandering.
- Translate conceptual frameworks into context-specific plans, so as to facilitate practical implementation of ideas.
- Therefore teachers’ methods should draw on or encourage local functional equivalents relevant to online class environment, either from academic publications or respectable digital media, interplaying with teacher-demonstrated generic examples, typical cases or facts.
- Learners lagging behind others should be coached by teachers in study skills, especially mono-tasking with a view to increasing their autonomous capacity for learning.

Conclusion

Neil A. Bradbury, one of the afore-referred evaluators of the teaching methods in whose article I first came across some of the above FL findings, noted also one key stipulation for speakers delivering their talks in the enormously popular TED talks series: they have a maximum of 18 minutes to present their material. The rule dictating 18 minutes is based on the belief that such time is long enough to have a ‘serious’ presentation but short enough to hold a person’s attention³⁸.

³⁸ N.A. Bradbury, *Attention Span during Lectures*, op. cit., p. 509.

While watching one of those short talks, my attention was first drawn to the above-quoted claim of H.L. Miller. Now, having gone through all the above findings, it seems to me that Miller's claim was too far-fetched. Moreover, other findings suggest that some goldfish trained to choose tubes of one colour over another in order to get food, were able to recognize the difference one year after the removal and reinsertion of those tubes³⁹.

Finally, if a heart rate is indeed a relevant measure of attention span, then – metaphorically – teaching the rule of law according to its United Nations design must take care of many challenges and subtleties that will make it stronger. Not anger, anxiety or hostility, but character education: positive emotions that drive inclusiveness and cooperation are in a short supply. And so is faith in the United Nations and its quest 'to ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development'⁴⁰.

Faith and positive emotions are needed to sustain a long and increasingly uphill run until 2030 and later when a new Agenda for Sustainable Development will emerge. They are needed to overcome challenges of the implementation of human rights, in strengthening human security, but first of all, in the strengthening of the role of prevention. For 'in matters of justice and the rule of law, an ounce of prevention is worth significantly more than a pound of cure ... prevention is the first imperative of justice'⁴¹.

Mindful of this overriding imperative, may this conclusion originally prompted by the almost century-old claim with which this article started, hopefully assist in making flipped learning a sensible, viable and successful tool for lifelong education.

³⁹ C. Brown, K. Laland, J. Krause, *Fish Cognition and Behaviour*, Blackwell Publishing, Oxford 2006, p. xvi.

⁴⁰ United Nations General Assembly, Transforming our World: the 2030 Agenda for Sustainable Development, A/RES/70/1, 25 September 2015.

⁴¹ The Rule of Law and Transitional Justice in Conflict and Post-conflict Societies, S/2004/616, *op. cit.*, § 4.

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