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“Who dares to teach must never cease to learn”
– John Cotton Dana

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Academic Paper – Philosophy of Education

1. Abstract

The intention of this paper is to critique the philosophy of education from the slant of adult teaching & learning and educational methods needed for teaching in the 21st century.

Countless papers and books have been written on the Philosophy of Education and educational theorists. I researched many of the great educationalist theorists, seeking out educators who studied the teaching of adults - the subject of andragogy, like Malcolm Knowles, the American educator (1913 – 1997). I also focused on the philosophy of education for the future of education and teaching rather than retrospective.

In this paper I will give a brief outline of the evolution of education and the role of philosophy therein and the influential education theorists and their legacies. I detail the theorists whom, I believe have had positive influences on education; Lev Vygotsky, Malcolm Knowles, Howard Gardner and Alfred North Whitehead.

Finally, I look at how the philosophy of teaching relates to the current educational landscape of the 21st century.

The research for this paper has informed my thinking on how and what we teach and has highlighted the importance of providing education that stands the test of time.

Keywords: Educational Philosophy, learning, teaching, andragogy

2. Philosophy of Education

The philosophy of education is the structured study of education, its function in society and its challenges, (which are constantly changing). Philosophers and educators have debated the philosophy of education since the time of Plato and Aristotle in Ancient Greece. The motivation for educating people has varied over the centuries, and thus the kind of knowledge being taught and the implementation & measurement of how learning occurs.

On review of the literature surrounding the philosophy of education, there does not appear to be one clear, resolved definition of the subject. Some philosophers were educators, some educators turned philosophers (Alfred North Whitehead, for example) and each had a different motivation or focus for their research and theories. I had unforeseen the lack of 'joined up thinking', (maybe not for the educational theorists operating in the pre 20th century era), but certainly for current day theorists. I was also surprised that core teaching methods and subjects had not changed more radically in recent years, as a response to the changing society and how learners learn. According to the EDUCAUSE Centre for Analysis and Research (ECAR)¹ Study of Undergraduate Students and Information Technology in 2017, 95% of undergraduate students own a laptop or a smartphone and 30 percent own a laptop, a smartphone, and a tablet. (Brooks C, 2017). I expected to discover increased international and cross institute collaboration, if not only because of the ease of collaboration and communication that technology now allows.

¹ EDUCAUSE are a non-profit association and the largest community of technology, academic, industry, and campus leaders advancing higher education through the use of IT in the USA.

One of the more interesting approaches to the issue of applying the philosophy of education fruitfully and in a contemporary way has been proposed by (Schulz, 2014), "Philosophy as a discipline of critical inquiry enables teachers to develop a thoughtful, critical capacity to reflect upon curricular, epistemological and popular media issues as they arise, whether during classroom discourse or professional policy deliberations." This view, if adopted by the education policy makers and institutions, will better prepare us for teaching and learning in the ever-changing educational landscape of the 21st century.

A personal teaching philosophy is a description of your values and beliefs as they relate to teaching. Your philosophy is based on your own formal teachings on education, professional experience and also draws upon your own experience of being a student and a teacher and also, I would argue, the society and culture in which one teaches.

2.1 Social Constructivism and Lev Vygotsky

Lev Vygotsky (1896 – 1934). Soviet Psychologist and Social Constructivist

"Social constructivism is a sociological theory of knowledge according to which human development is socially situated and knowledge is constructed through interaction with others (Mc Kinley, 2015 , pp. 184-207). Social constructivism was developed by Soviet psychologist Lev Vygotsky. He stressed that the role of social interaction was essential in knowledge creation. Vygotsky was a cognitivist, but rejected the assumption made by cognitivists such as Piaget that it was possible to separate learning from its social context as he believed strongly that community plays a central role in the process of "making meaning." (Vygotsky, 1978).

To better understand Vygotsky's theories on cognitive development, it is important to understand principles of Vygotsky's work, the More Knowledgeable Other (MKO) and the Zone of Proximal Development (ZPD) (which incorporated scaffolding). These concepts were developed by Vygotsky in the late 1970s. Vygotsky defines the ZPD as "the distance between the actual developmental level, as determined by independent problem solving and the level of potential development, as determined through problem-solving under adult guidance, or in collaboration with more capable peers" (Vygotsky, 1978).

The Zone of Proximal Development refers to the difference between what a learner can do without help and what he or she can achieve with guidance and encouragement from a facilitator. Thus, the term "proximal" refers those skills that the learner is "close" to mastering. Refer to figure 1 below, for a graphical representation of the ZPD.



Figure 1: Zone of Proximal Development (ZPD)

(Image source: <https://www.simplypsychology.org/ZPD-Scaffolding.jpg>)

The term scaffolding is often used with the ZPD. However, Vygotsky never used this term in his writing. It was introduced in 1976 by Wood, Bruner and Ross, (Wood, 1976, pp. 89-100)

Scaffolding in the Cognitive approach is also known as Constructivism. It consists of the activities provided by the educator, or more competent peer, to support the student as he or she is led through the zone of proximal development. The ultimate goal is that the student completes the task on his/her own.

Wood et al. define scaffolding as a process "that enables a child or novice to solve a task or achieve a goal that would be beyond his unassisted efforts". They explain, scaffolding requires that the adult "control those elements of the task, that are initially beyond the learner's capability, thus permitting him to concentrate upon and complete only those elements that are within his range of competence" (Wood, 1976, pp. 89-100), i.e. the ZPD. I would add that the coaching can come from another student, which we call Peer Learning. In primary and secondary schools, teachers could make greater use of the MKOs in their classes, widely known as the "early finishers" to help other students learn in class.

We have all felt the joy when we worked hard to accomplish something we found difficult but with perseverance and some coaching from a More Knowledgeable Other, we were able to complete it giving a sense of accomplishment and added belief in our abilities, thus widening our Zone of Proximal Development. This can build confidence in a learner and provide them with the encouragement they may need to continue with their studies.

2.2 Philosophy of Educating adults - Andragogy and Malcom Knowles

I first came across the term andragogy when I was researching an assignment for the Technology Enhanced Learning module in May of 2017. "We speak about pedagogy constantly in third level education, but this was the first time that I was aware that there was a name for, and a formal distinction between the teaching of adults and the teaching of children – which is what pedagogy technically means". (Mc Carthy, 2018)

"The term andragogy can be supposedly equivalent to the term pedagogy. Andragogy in Greek means 'man-leading' in comparison to pedagogy, which in Greek means 'child-leading'. However, it should be noted that the term pedagogy has been used since the Ancient Greek times, while Alexander Kapp, a German educator, first used the term andragogy in 1833." (Pappas, 2013). Malcolm Knowles (1913 – 1997) was an American adult educator, renowned for the adoption of the theory of Andragogy, originally championed by Alexander Kapp.

Knowles defines andragogy as "a voluntary adult pursuing self-determined learning objectives with the help of a facilitator, usually through the use of a learning contract". However, according to Rachal a full implementation of andragogy is not possible when the learners are required to be there. (Rachal, 1994).

Pedagogical methods were originally based on the teaching of children and when around the beginning of the 20th century, the scientific study of learning truly began, the research was "limited to reactions of children and animals to didactic teaching" (Knowles, 1980). As a result, when adult education began more systematically in the 1920s, teachers found that the methods that worked for children; "fact-laden lectures, assigned readings, rote memorizing, and examinations" did not work for adult learners and drop-out rates were high" (Knowles, 1980).

Alfred North Whitehead pointed out in 1931 that, it was appropriate to define education as a process of transmittal of what is known only when the time-span of major cultural change

was greater than the life-span of individuals. Only under this condition, what people learn in their youth will remain valid and useful for the rest of their lives. The enlightened mathematician and philosopher recognised that his was the first period in human history for which this assumption is false which is demonstrated in his diagram in Figure 2. The time span of social change is even shorter for the 21st century. Thus, the way we teach and learn in these rapidly changing times needs to reflect this huge shift in educational expectations (Whitehead A., 1931, p. 10).

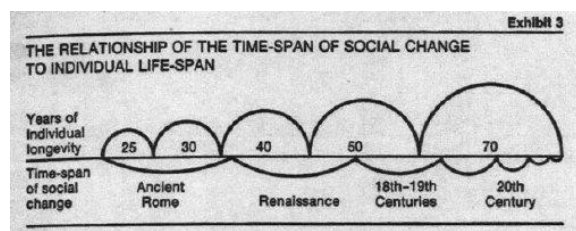


Figure 2. Major cultural changes and the life-span of individuals (Whitehead A., 1931, p. 10)

Thirty nine years later, Malcom Knowles, affirmed Whitehead's beliefs maintained "Today, this time-span is considerably shorter than that of human life, and accordingly our training must prepare individuals to face a novelty of conditions" (Knowles, 1980). So, for the first time in history, the learners had outpaced the knowledge. The knowledge gained at a given point in time would quickly (and has) become obsolete. Knowles went on to say that, "it is no longer functional to define education as a process of transmitting what is known; it must now be defined as a lifelong process of continuing inquiry and so the most important learning of all, for both children and adults, is learning how to learn, the skills of self-directed inquiry" (Knowles, 1980, p. 41). A module that is now mandatory for first years in most third level institutions is "Learning to Learn", or as it is called in GMIT, "Learning and Innovation Skills". Thankfully, the importance of learning how to learn, has since been recognised.

3. My Personal Teaching Philosophy

I employ a humanistic approach to teaching by collaborating with and teaching adult learners as equals, guiding them through the learning process. Outside of all the formal pedagogical and andragogical terms and techniques mentioned thus far in this paper, from my experience of teaching adult learners, the main "method" that works with them is trust and confidence. If you can get them to trust you as a teacher and trust in the learning journey they have just embarked on, usually with some trepidation, whilst also instilling in them that they have the confidence to learn, then they will stay on that journey and they will learn. In the evening classes that I teach in GMIT, which is comprised wholly of mature students, we have nearly 100% retention and pass rates. The other methods I employ are, encouragement, empathy and respect. "Our beliefs about the adult learner guide our methodological practice" (Rachal, 1994).

Adult learners come to class with many transferrable skills and some prior learning and/or experience. I summed up the importance of using this experience in a previous paper, "In my 18 years teaching adults, I have found that it is essential in a class of mature students to check for the learners' prior experience/knowledge, as there will invariably be students who will have valuable contributions to make in the classroom, based on their experience in the area under discussion. This peer assisted learning needs to be recognised and facilitated by the lecturer to harvest as much potential and value from it as possible to enrich the learning experience for all students in the class" (McCarthy, 2018).

I have been teaching formally for 18 years so I have much valuable experience to draw from. A wonderful bonus of doing the research for this Certificate in Teaching and Learning, personally is that, I now have the pedagogical terms and vocabulary for the teaching methods that I have employed since I started teaching but had not previously formalised. In the Continuing Professional Development (CPD) training courses I delivered in the Medical Device industry, my *modus operandi* was Problem Based Learning (PBL). In all my teaching, I encourage students to widen their Zone of Proximal Development (ZPD), by giving them the information and tools they need to master a topic or question and facilitating them through the learning path. My teaching mantra, as many of my students quote back to me, has been “give a man a fish, feed him for a day, teach a man to fish feed him for life”. There has been much fishing in my classes, especially the “landing” of statistical theories when the students see the application of same in their working life. The teaching of adults lends itself extremely well to Peer Learning as these students come to class with a wealth of experience which I encourage them to share with their peers. I have facilitated more than lectured over the 18 years and have made effective use of Scaffolding where I have given students the tools to build the learning bridge but yet, not build it for them. I have viewed my role of teacher as I view my role as parent with the ultimate aim of being no longer needed as the student/child becomes self-sufficient, which I now appreciate as the teaching method of scaffolding that is used with the ZPD (Vygotsky, 1978).

“True teachers are those who use themselves as bridges over which they invite their students to cross; then, having facilitated their crossing, joyfully collapse, encouraging them to create their own.” - Nikos Kazantzakis

As well as teaching students how to learn, it is important that we teach them the relevance of the topics they are learning and the application of same to their social and working lives. Each time I introduce a new topic in one of my classes, I remind my students to add this topic to their “radar”, in other words, to be aware of where and how they will see the application of this topic/tool once they leave the classroom. As I work with mostly mature students, who are working in industry, this is very relevant pursuit when they return to their company after the lecture. Many students have told me that they used to pass by examples of what I had just spoken about, for years and it was not until they put it on their “radar” that they realised its function and now understand the theory of it also. Hendley and Whitehead describe this concept more articulately than I in the following, “Whitehead would have us prevent such “mental dry rot” by showing our students that the ideas we are asking them to learn are indeed useful. Rather than allowing them to remain inert, he would have us utilize ideas. “By utilizing an idea,” he says, “I mean relating it to that stream, compounded of sense perceptions, feelings, hopes, desires, and of mental activities adjusting thought to thought, which forms our life” (Hendley, 2010). I simply call it, ‘making it real for people’.

In 1984, Knowles suggested 4 principles that are applied to adult learning:

1. Adults need to be involved in the planning and evaluation of their instruction.
2. Experience (including mistakes) provides the basis for the learning activities.
3. Adults are most interested in learning subjects that have immediate relevance and impact to their job or personal life.
4. Adult learning is problem-centred rather than content-oriented (Knowles, 1980).

On reflecting on the practicalities of implantation on these principles, a difficulty applying principle one is that most students are not given opportunity to plan or evaluate their instruction, as it is not feasible. I collect students’ feedback at the end of each module and I endeavour to include the suggested improvements in the planning and evaluation of the next iteration of the course. So, it is not the current students who benefit from the improvement but the classes from following years. So, to some extent I am implementing Knowles’ first principle. Principles two and four above are more readily implementable in the teaching of

adults and in my experience they are more open to making mistakes and attempting a problem that their younger counterparts. Many mature students tend to go back to college to study a subject area they are interested in or already working in so I frequently see principle three in action. Knowing this, I ensure to demonstrate the relevance and applicability of the subject to students so that they remain engaged and interested.

4. Conclusions

- In the course of my research, I have recognised that there is no one educational method or theory that fits any one learning situation and neither should we employ what philosophers call, “either/or thinking” and use only one system over another. To be effective, engaging educators in this rapidly changing time, we need to employ whatever educational methods are appropriate. I believe that effective teaching practitioners will continue to employ and adapt the myriad of methods that work for them in the many and varied educational settings they find themselves in. We should also continuously strive to improve those teaching methods, in other words, to progressively educate ourselves, the educators.
- The invaluable learning-teaching transaction can take place in many ways and in many different environments, both physical and virtual. Teachers and courses differ and the student body differs in culture and background. There are thus countless combinations of educational settings and not one education system or instructional practice is going to work for all. No single principle can account for full educational development of an individual or group. (McLeod, 2018) maintains that “Individual development cannot be understood without reference to the social and cultural context within which it is embedded.
- Students are still generally “categorised” by having varying degrees of intelligence and being a successful student, by the grades they achieve in school. This can result in the academically “unsuccessful” student becoming demoralised or dropping out of education when, in fact there are many different types of intelligence and many types of learners. One Harvard psychologist, Howard Gardner maintained that “our culture had defined intelligence too narrowly” and refused to accept that human intelligence could be objectively measured and reduced to a single number – an IQ score or a Grade Point Average (GPA). Gardner challenged old beliefs and introduced ‘The Theory of Multiple Intelligences’, outlining seven different kinds of intelligences; (1) Linguistic, (2) Logical-Mathematical, (3) Musical, (4) Bodily-Kinaesthetic, (5) Spatial-Visual, (6) Interpersonal and (7) Intrapersonal, (Gardner, 1983). Gardner maintains that true human potential can be tied to one’s preferences to learning and that people have a unique blend of capabilities and skills (intelligences).
- Most educators are aware that there are three different types of learners; (1) Visual, (2) Auditory, and (3) Kinaesthetic and we have been mindful of this in recent years when delivering our lectures and preparing our lecture material. Whilst we have been aware of this when creating learning content and learning objects, educators, and I think, society in general has been more hesitant to create learning assessment pathways and varying education vehicles, outside of the norm for students who are not seen as “traditionally” academic. It is possible that the Quality Assurance systems of learning institutes have hampered this creativity as award standards have to be maintained. I believe that with some outside-the-box thinking we can create assessment methods that address the various kinds of learners. Supporting my

theory, Thomas Armstrong explores this question in his book, 'Multiple Intelligences in the Classroom', when he writes, "It would certainly be the height of hypocrisy to ask students to participate in a wide range of multispectral experiences in all seven intelligences and then require them to show what they've learned through standardized tests that focus narrowly on linguistic or logical-mathematical intelligences. Educators would clearly be sending a double message to students and to the wider community: "Learning in eight ways is fun, but when it comes to our bottom line, evaluating students' learning progress, we've got to get serious again and test the way we've always tested." Thus, Multiple Intelligences (MI) theory proposes a fundamental restructuring of the way in which educators assess their students' learning progress. It suggests a system that relies far less on formal standardized or norm-referenced tests and much more on authentic measures that are criterion-referenced, benchmarked, or ipsative" (Armstrong, 2009).

- According to Gardner, our current school system rewards (the first two types of intelligences), Linguistic and Logical-Mathematical intelligence over the others and students displaying these types of intelligence are lauded in our society. However, Gardner says that "we should also place equal attention on individuals who show gifts in the other intelligences: the artists, architects, musicians, naturalists, designers, dancers, therapists, entrepreneurs, and others who enrich the world in which we live". Unfortunately, many children who have these traits don't receive much praise for them in main stream schools. Many of these children end up labelled with learning difficulties or as having Attention Deficit Disorder (ADD) and some are even medicated! Others, who do not thrive in a heavily linguistic and logical-mathematical school system are deemed non-academic or underachievers and often leave school early or don't go on to third level. What could their potential have been if their unique ways of thinking and learning were addressed in the classroom from an early age?
- Educators who are interested in all students reaching his/her potential should feel compelled to create methods of teaching and assessment that address the different ways of learning that exist in order to optimise the knowledge transfer process and students' potential. I fully appreciate that in a busy academic setting, where academic standards have to be maintained, this is not always feasible, but I believe it should be considered when reviewing or creating a new module or program. The noble and pure goal of why we assess students is surely to facilitate and ensure that learning transfer takes place but many assessments are logical or mathematically based, which perfectly suits students with strongly orientated logical/mathematical intelligence, yet our society would not be operational nor interesting if we had a world full only, of mathematicians!
- A wonderful example of using the principles of teaching and assessment, with Multiple Intelligences in mind, is active in Brown University in Providence, Rhode Island, USA. In 1969, A team of students and staff at Brown University established its Open Curriculum. "This open curriculum implemented grading policies that encourage students to explore the curriculum widely. Students can choose to take most courses on a Satisfactory/No Credit basis. Brown University students are encouraged to gather materials in their online portfolios that provide more rounded measures of their knowledge and skills. These materials, such as course performance reports, letters of recommendations, and capstone projects, provide qualitative evidence that students possess those abilities most valued by employers - analytical ability, independence, creativity, communication, and leadership skills. Employers are encouraged to review such materials when considering a Brown

University student for a position in their company". (www.brown.edu, 2018). Source, the Brown University website.

- Brown University's teaching and learning ethos demonstrates an excellent example of doing things differently, yet successfully. It is confirmation that Gardner's and Armstrong's theories, (discussed above), can work, it is a "system that relies far less on formal standardized or norm-referenced tests and much more on authentic measures" (Armstrong, 2009). I think their system of education lends itself to an increased sense of team and collaboration as students are not in fierce competition to determine will be top or bottom of the academic ladder come conferring day. Is this system transferrable to GMIT?

"Real learning comes about when the competitive spirit has ceased." - Jiddu Krishnamurti

- The Virtual Learning Environment (VLE) is now a fundamental part of third level education in Ireland and a study (Risquez, et al., 2013, p. 103) concluded that 83% of students in higher education in Ireland access their institutions VLE daily or a few times per week. (Tobin, 2016). We need to engage with and improve the technologies we employ in our teaching and prepare our students for the current employer trend of requesting the eportfolios of potential employees. Ireland has been behind the curve on the development and use of eportfolios, "The slow pace of adoption of eportfolios in Ireland is due to three factors: a lack of government policy drivers; no distinct Irish eportfolio community; and a scarcity of funding. (Farrell, 2018, pp. 154-163). These issues need to be addressed to ensure our well-qualified Irish students are not left behind on the global job market. We can prepare our students by including the creation of an eportfolio as a practical assessment in a final year module.
- Learning is a lifelong process of continuing inquiry and so the most important learning of all, for both children and adults, is learning how to learn and adapting what is learned. We need to review what we teach, how we teach it and our assessment methods to ensure we future-proof our education system and develop ways of teaching agility and adaptability skills to ensure our students are prepared for the modern work landscape. We are teaching in a very different time, Piaget and others would not recognise the educational landscape and complexities of the teaching and learning environment of today. In the last 20 years there has been massive change in the use of personal computers and devices and people no longer stay in the one career they were "trained" for. Access to knowledge need not be through rote learning, the key skill for learning in our times is in constructing meaning from vast readily accessible information.

Finally, I will always be a learner yet, I am daring to teach. I enjoy my role and embrace my responsibility fully because I truly believe that; "One child, one teacher, one book, one pen can change the world." - Malala Yousafzai, I Am Malala: The Story of the Girl Who Stood Up for Education and Was Shot by the Taliban

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6. References

1. Armstrong, T., 2009. *Multiple intelligences in the classroom*. 3rd ed. Alexandria, Virginia USA: ASCD.
2. Brooks C, J. P., 2017. <https://library.educause.edu/resources/2017/10/ecar-study-of-undergraduate-students-and-information-technology-2017>, Louisville, CO, USA: EDUCAUSE Center for Analysis and Research (ECAR).
3. Dale, R., 2000. Globalization and Education: Demonstrating a "Common World Educational Culture" or Locating a "Globally Structured Educational Agenda"? *Educational Theory*, 50(4), pp. 427-448.
4. Dewey, J., 1916 . *Democracy and Education : An Introduction to the Philosophy of Education*. s.l.:Macmillan.
5. Dewey, J., 1925. *Experience and Nature*. s.l.:McCutchen Pr..
6. Donaldson, L., 2018. *e-portfolios for Everything: Assessment, Extra Curricular activities and Work Based Learning*. Galway, <https://www.zeetings.com/donaldson/0005-4355-0001#page>.
7. Donham, W. B., 1931. In: *Business Adrift*. Oakland, CA: Whittlesey House, McGraw-Hill Book Company, Incorporated, .
8. Egan, K., 1997. *The educated mind: How cognitive tools shape our understanding..* Chicago: University of Chicago Press.
9. Egan, K., 2008. *The Future of Education: Reimagining our schools from the ground up..* New Haven: Yale University Press.
10. Farrell O, S. A., 2018. I am not simply learning and regurgitating information, I am also learning about myself": learning portfolio practice and online distance students. *Distance Education*.
11. Farrell, O., 2018. Failure to Launch: The Unfulfilled Promise of Eportfolios in Irish higher education: An Opinion Piece. *DBS BUSINESS REVIEW*, Volume VOL 2 (2018), pp. 154-163.
12. Gardner, H., 1983. *Frames of Mind: The Theory of Multiple Intelligences*, NYC: Basic Books.
13. Hendley, B. P., 2010. *Dewey, Russell, Whitehead: Philosophers as Educators*. 1st ed. Carbondale: Southern Illinois University (SIU) Press.
14. Kearsley, G., 2010. *Andragogy (M.Knowles). The theory Into practice database..* [Online] Available at: <http://tip.psychology.org> [Accessed 12 2018].
15. Knowles, M. S., 1980. *The modern practice of adult education: From Andragogy to Pedagogy*. Revised ed. NJ: Cambridge Book Company.
16. Mc Carthy, R., 2018. *Comprehensive Learning Environment Assignment for Technology Enhanced Learning (TEL) module (Level 9)*, Galway: GMIT.
17. Mc Kinley, J., 2015 . Critical Argument and Writer Identity: Social Constructivism as a Theoretical Framework for English as a Foreign Language (EFL) Academic Writing. *Critical Inquiry in Language Studies, University of Bath*, 12 (3), pp. 184-207.

18. McLeod, S., 2018. *www.simplypsychology.org/vygotsky*. [Online]
Available at: <https://www.simplypsychology.org/vygotsky.html>
[Accessed 11 2018].
19. Meister, J., 2012. *Forbes.com The Future Of Work: Job Hopping Is the 'New Normal' for Millennials*. [Online]
Available at: <https://www.forbes.com/sites/jeannemeister/2012/08/14/the-future-of-work-job-hopping-is-the-new-normal-for-millennials/#2fbaafcb13b8>
[Accessed Dec 2018].
20. Palmer, J. C. D. B. L., 2001. *Fifty Modern Thinkers on Education: From Piaget to the Present Day*. s.l.:Routledge.
21. Pappas, C., 2013. *The Adult Learning Theory - Andragogy - of Malcolm Knowles*. [Online]
Available at: <https://elearningindustry.com/the-adult-learning-theory-andragogy-of-malcolm-knowles>
22. Polito, T., 2005. *Educational Theory as Theory of Culture: A Vichian perspective on the educational theories of John Dewey and Kieran Egan..* NYC: Educational Philosophy & Theory.
23. Rachal, J. R., 1994. *Andragogical and pedagogical methods compared: A review of the experimental literature*. Hattisburg: University of Southern Mississippi.
24. Riskey, A. et al., 2013. Chapter 8 An investigation of students' experiences of using virtual learning environments: implications for academic professional development. In: *An investigation of students' experiences of using virtual learning environments: implications for academic professional development*. Limerick: Emerging Issues in Higher Education 111: From Capacity Building to Sustainability, pp. 99-112.
25. Robinson, V., 1992. Why Doesn't Educational Research Solve Educational Problems?. *Educational Philosophy and Theory*, 24(2), p. 8–28.
26. Schulz, R. M., 2014. *Rethinking Science Education : Philosophical Perspectives*. 1st ed. Charlotte: Information Age Publishing Inc..
27. Thoreau, H. D., 1854. *Walden; or, Life in the Woods*. 1st ed. Boston, Massachusetts, USA: Ticknor and Fields.
28. Tobin, B., 2016. *Increasing student engagement with virtual learning environments*, Dublin: Dublin Business School.
29. Twitter, 2018. <https://twitter.com/AJEnglish/status/1073691600352555010>, Baghdad: Twitter.
30. Vygotsky, L., 1978. *Mind in Society*. London: Harvard University Press..
31. Vygotsky, L., 1978. *Mind in society: The development of higher psychological processes*. 1st ed. Cambridge, MA: Harvard University Press.
32. Wagner, T., 2016. *Tony Wagner Transforming Education*. [Online]
Available at: <http://www.tonywagner.com/7-survival-skills/>
[Accessed DEcember 2018].
33. Whitehead A., 1931. Introduction to Business Adrift. In: D. W.B, ed. *Business Adrift*. New York: McGraw-Hill, p. 10.
34. Whitehead, A. N., 1911. *An Introduction to Mathematics*. 1st ed. London: Home University Library of Modern Knowledge.
35. Wood, D. B. J. & R. G., 1976. The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry*, 17(2), pp. 89-168.
36. Wood, D. B. J. & R. G., 1976. The role of tutoring in problem solving. *Journal of Child Psychology and Child Psychiatry*, 17(2), p. 89–168.
37. *www.brown.edu*, 2018. *Browne University website*. [Online]
Available at: <https://www.brown.edu>
[Accessed December 2018].