

## What is Experiential Education?

Why this is so important (and how that can be dangerous).

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### **Abstract**

The goals of this study are to determine whether there is a clear definition or shared understanding of *experiential education*, to explore the history of the concept of *experience* related to education and knowledge, to look at how related terms are used in educational research, and to consider what the impact of this might be on the modern education system. An extensive literature review on the changing definitions and concepts related to the subject of experience and education over the last 2,000 years is given; further chapters explore modern use of related terminology and research that contribute to miscommunication and confusion on the subject. No firm conclusions on agreed definitions are given, however, underlying agreements on educational approaches are highlighted, leading to research questions for the future.

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## **1. Introduction**

The following investigation was initially inspired by my own desire to discuss what good quality education is, and how education today, especially in classrooms and schools in areas with low socio-economic status, can be improved. Due to my personal experience in education I have a strong desire to discuss what I know as *experiential education*, but I discovered that, not only is it difficult to discuss experiential education, it is actually difficult to discuss ‘good quality education’ at all. This was especially surprising to me when I struggled to discuss education with people I largely agreed with on what constitutes good education. My efforts to understand where this confusion lies were the inspiration for this paper.

I will start my discussion with a frank look at my own educational background, and the personal experiences that sparked off my initial confusion. I will then look back through history in a literature review, demonstrating that, although the discussions around the ideas relating to knowledge and learning have changed over the years, the role of *experience* in education and learning has always been core. As I draw forward into the last century, I will demonstrate how the use of terminology and concepts in modern research can actually contribute to confusions around the subject of *experiential education*, rather than clarifying it, which can have a negative impact on the quality of both research and education. Finally, I will note underlying agreement beneath extremes in terminology, and articulate research questions for the future.

### **Philosophical Research Methods**

There are no strict methodological approaches associated with philosophical research methods, however, in the spirit of Claudia Ruitenberg’s article “Introduction: the question of method in philosophy of education” (2009), “by naming [my] ways of thinking and writing as

philosophical research methods, [I make] these ways of thinking and writing available for explicit consideration” (p. 315).

In my quest to research *experiential education*, I began the process by looking through the library database using terms relevant to *experiential education* as a foundation for my initial search. In my searches I discovered that different people/authors/researchers use slightly different words to refer to approaches that I had been referring to as ‘experiential’. These include such terms as experiential learning, experiential education, place-based learning, service-learning, project-based learning, subject-related activity, practical learning, kinaesthetic learning, creative teaching, discovery learning, wilderness learning, adventure education, craft education, hands on learning, constructivist learning, learning by doing, student centred learning, life skills, applied learning, activity-based learning, and problem based learning.

After searching University library search engines for journal articles and books using these words as descriptors, I read them to see whether they had points of agreement and difference. I then traced back the bibliographies of those articles and books to see who the authors are quoting as experts, then looked up those research papers and books, etc. By tracing the roots of these scholarly articles and use of terms back to the foundations of historic writing, I hoped to clarify where the apparent modern confusions lie and whether there are lessons that have been learned that could help us with the development of our modern education system – especially here in Nova Scotia. Interestingly, we seem to be stuck in something of a loop, with the same conversations taking place now as have already taken place times before.<sup>1</sup>

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<sup>1</sup> “I would suggest that the universality of education as a social institution makes this almost inevitable” (Dr. R. Bérard, comment, July 2016).

**Disclaimer**

Many of the writers that I quote use the male perspective (he, him, man etc.). I have left these statements as they stand. It should be noted that although these words can be used to mean *human* and therefore used to express a universal perspective, in some cases the use of the term is purposeful, and is actually intended to exclude women (or minorities etc.). For example, Ancient Greeks are known to have thought women to be inferior to men in every way, with more in common with animals than the gods<sup>2</sup> and it could be said that Christianity spread a similar message<sup>3</sup>.

**2. Context****Background**

When I first began to try and discuss education here in Nova Scotia I realised that I didn't have the terminology to discuss my main educational interest with people here; and when I did, the words frequently had entirely different connotations than I had intended. Specifically, I wanted to get involved in helping develop education in NS by ensuring all students (especially 'at-risk' students) had access to creative and engaging activities in their lessons, and I was using the term 'experiential education' to refer to this.

One reason for my communication difficulties may have been that, although I had grown up in Nova Scotia and went through the school system here, up until that point my working life in education had been based in the UK, in an alternative education system with quite specific underlying principles. In this context, I had been surrounded by people sharing a certain

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<sup>2</sup> See "Women in Ancient Greece" (n.d.) in references.

<sup>3</sup> See "Woman Inferior to Man" (n.d.) in references.

philosophical approach related to education: that education was about helping students build an interest, understanding, respect and relationship with themselves and the world around them; and that to do so, all of a student's senses must be engaged through 'thinking, feeling, and willing' or 'head, heart and hand'.

The UK does not have inclusive education as we do here in NS (they generally use the word to refer to racial inclusion) and as such, they stream students into classes and schools according to ability. The colleges I worked for all operated under one 'charitable trust' (I will refer to it by the fictional acronym OCT for the purposes of this essay). They were publically funded for students that were referred by social services--the majority of students--but were also open to private students who had families that could pay for their placements. When I first began working for OCT in the 90's<sup>4</sup>, our students (16 – 25 year olds) were an interesting mix of young offenders, young people from families experiencing complicated social circumstances, and young people with behavioural and/or learning difficulties. Due to changes in funding over the years, however, the demographics of the colleges changed<sup>5</sup>; they now cater exclusively to young people with complex learning and behaviour difficulties.

The colleges have an almost entirely practical curriculum, based on the concept that young people experiencing social difficulties and/or with special needs and behavioural difficulties respond particularly well in this type of learning environment. Part of my role as the numeracy and literacy tutor and co-ordinator was to develop and initiate a pilot scheme for highlighting and working with the embedded literacy and numeracy taking place in practical

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<sup>4</sup> I began working for OCT in the '90's and left my last job with them in 2012.

<sup>5</sup> Funding for *special education* became linked exclusively to individuals with statemented learning and/or behavioural problems rather than being linked to a wider category of 'at-risk' youth. Before the model changed, for example, we would frequently be sent young people that were given the option of attending OCT as part of an alternative to incarceration.



craft and landwork courses (the core curriculum of the college), as well as running classes on theory so the students could learn and apply concepts.

This was a very interesting aspect of the job, as I had to provide the underpinning theory for mathematical or literacy related concepts, and then either develop a practical task that would provide the opportunity to practice the related skills, or work with the other tutors to highlight the theory behind the activities they were already doing. As an example of the former, we built and used a weather station as it provided the perfect platform for practicing the concepts of measurement and estimation as well as a context for building vocabulary about the world; an example of the latter was working with the landwork tutor to develop specific opportunities for calculating area related to grazing or planting, or applying multiplication to buying and using supplies in fence building.

It was during this period that I really began to realise the degree to which some people learn by doing; how essential it is for some students to be able to access more practical aspects of math in order to illustrate or understand the theoretical, and also how important reflection and discussion can be. For example, there were quite a few students that genuinely believed they didn't understand decimals, but were better at calculating money matters than I was. They had been somehow convinced that they were terrible at math, and had never really learned the degree to which math represents reality; i.e., that there is a direct connection between the two. I can clearly remember one young man who had been a drug dealer. He was able to calculate very complicated sums in his head that involved translating prices relating to metric or imperial weights back and forth, yet had no idea that this even related to mathematics. He firmly believed that math was a paper-based subject, and that he was a failure at it.

One of the older, British, tutors and I had a conversation one time on the whole subject of how experience in a particular area can help instill the confidence to learn more, but how, with our students, we had to first help them realise what they knew in terms they understood before they could move on. She described how, when she was young they still used the ‘old’ system of money in England, i.e., before the modern decimalised system in which there are 100 pence in a pound. I won’t describe the whole system here now, but in the old system there were 20 shillings in a pound, 12 pennies in a shilling, four farthings in penny. There was a coin called a sixpence (i.e., six pence) and one called a thruppence (i.e., three pence). The tutor said that, back then, everyone could easily calculate with this system – people didn’t think twice about it. She said young people back then could count up in sixes as easily as we do these days in fives. This really helped me understand how much of our personal knowledge is cultural, and how closely learning new information can be linked to understanding what we already know. I found it fascinating to consider; it helped me deepen my own understanding of how our practical experiences in life relate to things that might be considered more theoretical, and that our understanding of things is linked to our knowledge through experience.

At OCT the math program for a student was really made up of every practical class they had on their timetable, and a weekly classroom based session that provided an opportunity to highlight the math links that were taking place, to practice sums or other theory, and play math-based games. We started an ‘embedded math’ program for students that refused to attend math class in which I or another tutor would go to their other classes to help the students understand that they were doing math so they would feel more confident in it. This proved so effective that we eventually developed this as a part of the work each practical tutor did with the students in

their sessions. This was a time of extreme learning for me as I had a lot of interaction with a wide variety of people, both students and tutors.

I soon became co-ordinator of the accreditation program at one of the colleges, which helped support and further develop my interest in the links and divisions between the more theory based elements and more practically based elements of learning. Another contributing factor was the fact that, at the time, the UK was in the process of introducing a second tier of accreditation for learning. Before then, they had a single tier for accreditation, which was based on academic qualifications – much like ours in Canada. The government of the day was trying to address this by developing an accreditation system (called *the Qualifications and Credit Framework*<sup>6</sup>) that broadened the definition of accreditation to include college diplomas and certificates, as well as recognising other qualifications that were based on practical activity. In the early development stage the new system was also supposed to have provided an assessment framework that was not based on reading and writing, but that early promise eventually petered out. Some years before, they had tried to introduce a system of ‘applied’ exams in the UK (e.g., applied physics), but found that the teachers were still teaching it based on theory (e.g., merely telling the students what the results of an experiment would be if they actually did it, and having them write about it) so the system failed. Many teachers saw the lower levels of this new tier of learning in the QCF (at the time referred to as the ‘Foundation Learning Tier’) as having failed in a similar way, due to the exclusively written nature of the assessments<sup>7</sup>.

After working for some years in these colleges, I was asked to help develop a new project for public school students that were considered at risk of becoming ‘NEET’ (not in employment,

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<sup>6</sup> Qualifications and Credit Framework <http://www.accreditedqualifications.org.uk/qualifications-and-credit-framework-qcf.html>

<sup>7</sup> Assessment of Foundation Learning [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/183339/DFE-RR130.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/183339/DFE-RR130.pdf)

education or training) based on practical activities. In the early days the project was assessed on whether students attended, as many of them had been 'school refusers', but as time moved on assessment was based on accredited learning and marks. By these terms, the curriculum we created, based on mostly animal, land and craft-based activities, was clearly educative in a quantifiable way, - but also proved to be very therapeutic for the struggling students that had been sent to us in ways that were perhaps less clearly quantifiable. This was not entirely surprising due to the success of the colleges we already ran for students with special needs, but nonetheless it helped demonstrate to me the wide appeal of practical learning. It also illustrated to me that there are many students that are not formally identified as having special needs, but that seem to be unable to grasp some fundamental concepts of life (including everything from social skills to math) unless they are able to apply them.

Based on the success of the project, I started working directly with other students in local schools--schools that had sent some of their 'NEET' students to us and now were looking for 'enrichment' or 'engagement' activities for all of their other students--helping them create curriculum-related projects. We used terms like 'practical activities' and 'experiential education' to refer to the projects, including any written aspects. No one ever questioned the positive benefits of these activities to learning--we had all worked in education long enough to have seen the benefits for ourselves, but this also showed in students' marks as well as in their motivation to be involved. As an example, one great series we organised was to underpin the sciences, and involved digging clay, building a pounded earth pizza oven, making charcoal, building and using a lime-stone kiln, slaking the lime and painting it onto the base of our pizza oven; the chemistry of yeast in pizza dough was explored when the base was complete.

We held open days regularly, and sometimes invited school groups along. I regularly had conversations with teachers who wistfully spoke about how much their students would benefit from participating in such activities more regularly. There was a shared experience of many students' lack of engagement in traditional academic approaches to learning, and of how most students (including and especially those who were academically gifted) became more engaged and proved to have learned more after participating in our activities. The only concerns that I heard expressed by the teachers and head teachers were those of cost and liability: they saw these activities as expensive, while insurance, bureaucracy and associated red tape made activities and outings problematic.

Having recently moved back to Nova Scotia, I want to become a part of the discussion on education here, and to somehow contribute to the development of our system--especially in schools with large percentages of struggling students. The first step in communication is shared understanding, however, and one of the first problems I had here in NS was in communicating to others about what I meant when I described my interest: what I called experiential or practical education. Due to these experiences, I began to read literature on the subject and quickly discovered that this problem is not a local one, or even a recent one, but one that, in some ways, traces back to the first discussions on education that we have a record of.

Personally, what I wanted to express through the term *experiential education* was education that involves intention, movement and reflection; I meant education involving all of the senses (not just the five senses Aristotle described, but the more than 20 senses modern science refers to); I meant education that involves head (thinking), heart (feeling) and hand (doing) in balance; I meant involving the artistic with the scientific, embedded in the ethical; I meant the participation in activities that underpin a theoretical concept that is being taught; I

meant students having thoughtful, social and physical interaction with their environment; I meant having creativity be core to each subject; I meant offering options for assessment; I meant involving reflection as an essential part of the learning process.

To bring some clarity, some examples might be: learning chemistry fundamentals through slaking lime, and then making and using the resulting whitewash before learning the relevant equations; learning the principles of flight through folding paper airplanes and kites and then using them to see exactly how effective each model is; learning about compassion/anti-bullying through participating in a physical task or obstacle course in which the whole group has to finish together alongside verbal presentation and discussion; learning math through music, cooking and puzzles as well as through memorisation of tables and practicing sums; learning about civics through holding a classroom model parliament election involving debates and discussions; learning the basics of practical banking, investments, bills, borrowing, etc. through creating a school based banking system. There are an endless number of examples that could be given here, and there are many schools of thought that support such an approach (both in public schools and in schools inspired by such people as Dewey, Montessori, Steiner<sup>8</sup>) and significant research has taken place on whether this is an effective educational approach (on which, more below).

This definition includes aspects of what is referred to as *holistic* in that it isn't necessarily broken up into separate subjects at all times<sup>9</sup>. In my own experience, cross-curricular links are a very effective way of both motivating students and in reinforcing knowledge and skills. With a

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<sup>8</sup> I will return to Dewey, below. For more information on Montessori and Montessori schools see e.g., <http://www.ourkids.net/montessori-education-philosophy.php> ; for more on Steiner and Waldorf schools see e.g., <http://www.steinerwaldorf.org/steiner-education/what-is-steiner-education/> .

<sup>9</sup> *Holistic education* may be as difficult to define as *experiential education* is when taken as a whole, but in this case I am only using the word *holistic* in a limited way, as defined in this sentence.

holistic approach, once a creative activity or theme has been chosen as many subjects can be linked into it as desired. There was a recent example of this in the local newspaper (Ware, 2014): a school in Chester learned about local First Nations culture by developing many activities around the subject. Students took part in powwows and drumming; they learned about and created petroglyphs; they invited four first nations elders to a day of celebration focussing on their traditions; they listened to the elders tell their stories and helped celebrate their culture by participating in a smudging ceremony; they created slide shows and gave presentations on what they had learned; they cooked local traditional foods. One group of students went on a camping trip to Kejimikujik<sup>10</sup> where their explorations continued. In this case, English, history, art, music, math, technology, home economics, physical education, biology and geography were all linked through this theme in quite a memorable way.<sup>11</sup> In fact, all of the examples of experiential learning given above have these cross-curricular links. Until this time I had thought that this approach was commonly called experiential education (i.e., education rich in experience), but it turned out not to be as simple as that.

When I first spoke of *experiential education* to my professors and fellow classmates here at the University (I will call the University *Uni* for the purposes of this essay) I quickly realised that I needed further clarification. Most people seemed to either think of it as either a term exclusively referring to ‘enrichment activities’ that were outside the normal scope of a classroom and teacher, or to associate it exclusively with students with special needs. Meanwhile, I heard terms such as ‘real learning’ or ‘real lessons’ used to distinguish such classroom activities as writing and passive listening.

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<sup>10</sup> Kejimikujik is a national park in Nova Scotia. It is very special to the local First Nations people - the Mi'kmaq – who have used this land for thousands of years.

<sup>11</sup> “...while such activities can bring us to knowledge that might otherwise only be found in, say, a geography book, further steps are needed to help the student understand what geography *\*is\** and how it differs from (as well as interacts with) economics, history, etc.” (Dr. R. Bérard, comment, July 2016).

In class one time here at Uni, we were looking at a piece of research entitled “Influences of Stimulating Tasks on Reading Motivation and Comprehension” (Guthrie et al., 2006), in which the researchers had three classes address the same subject matter in three ways distinguished by the number of “stimulating tasks” they used (these were tasks I would have called *experiential*). The study found that the more stimulating tasks were used, the more motivated the students were, which led to greater engagement and deeper comprehension (this was reflected in marks). One of my fellow students (a teacher) remarked that she hated research like this as it was entirely pointless: “everybody knows which group is going to do better”. This is also reflected in the conversation I had with another professor, when, in trying to define ‘experiential education’ I used the term ‘subject-related activity’ to try to encapsulate what I was referring to. She asked if what I was referring to should simply be called ‘good teaching’.<sup>12</sup> According to NS government documents this is absolutely right: this is good quality teaching. The NS Dept. of Education *Public Schools Program* document states that one of the main things quality education should be judged on is the variety of “educational experiences in which students are actively involved”<sup>13</sup>. On the one hand, lessons full of *experiential* activities were seen as obviously positive, but on the other hand, some conversation indicated that ‘real lessons’ were to be based on reading and writing, indicating a kind of hierarchy<sup>14</sup>.

In another MEd class here at Uni, one of my fellow classmates (also a teacher) was talking about how disappointed he was in one of his students who had applied to take part in a pilot *project-based learning* project they were having at their high school. My classmate

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<sup>12</sup> This was my advisor, Dr. Michelle Forrest.

<sup>13</sup> “Quality in education is demonstrated by the excellence of individual courses, programs, and shared experiences. Quality is also demonstrated by the diversity of educational experiences in which students are actively involved and by the extent to which individual student needs are met.” Public School Programs document (2003-2004).

<sup>14</sup> “Fair point. At the same time, while there are people who are both highly skilled and deeply insightful as well as being illiterate, reading and writing are privileged in any contemporary society” (Dr. R. Bérard, comment, July 2016).



described how dismayed he was to learn this, as the student was very clever and really capable of anything-- “why would she want to waste a year like that?” I found this fascinating as my understanding of project-based learning was closely related to experiential education, i.e., that it would be highly experiential and would entail lessons based on the creative exploration of initial theories and full of stimulating tasks. Upon further conversation, my classmate explained that he hoped that the student in question would go on to university. In our university class he gave verbal support for various approaches and methods of teaching, but in actuality, for him, project-based learning was for people that were not capable of what he called “academic learning”.

Further to the specific use of the word *experiential*, I have also heard teachers in conversation use the word to describe one aspect of their classroom activities: i.e., “they were doing academic work and experiential activities”, and had a fellow student doing a presentation (a nurse doing an MEd) describe “real experiential education” as being entirely self-directed.

What I want to be able to talk about is: do we agree that everyone benefits from a well-rounded, activity rich, arts and science based school experience with a highly creative atmosphere and a balance between theory and practice? If so, why aren't our schools like this? In fact, are they? How are we assessing what our schools are offering regarding resources? How do we talk about this, i.e., what language do we use? How can we address the relevant/related issues? Currently it is politicians that make the decisions behind our education system<sup>15</sup>--how are they approaching this conversation? Is experiential education (if that is the right term, see discussion below) basically a description of good teaching, is it an optional add-on to an ‘academic’ curriculum, - in fact, is it an element of education that should be distinguished from any other since, after all, isn't everything some kind of experience? I have already proven to

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<sup>15</sup> “Once education becomes, effectively, a government monopoly, this is all but inevitable” (Dr. R. Bérard, comment, July 2016).

myself that whatever terms I use are interpreted differently depending on who I talk to. In fact, the previous paragraphs illustrate this perfectly--what do these related terms mean? And most importantly, what effect is all this having on education?

As I started to read more about education, I began to realise even more deeply exactly how complicated this subject is. These days we not only have the confusion of clarifying the concepts themselves, but also the accompanying emotional and political baggage that has been attached to them through years of references and mis-references. This can result in unfounded bias as well as misperceptions regarding educational research. For example, the following is a quotation from an article written by M. Zwaagstra, and published both on-line and in *The Chronicle Herald* (Zwaagstra is a teacher and writes advice on policy for various Institutes, including our local *Atlantic Institute for Market Studies*). To be clear, this is not a scholarly article, and he uses no footnotes or references, but he is an experienced teacher (and MEd) who is giving what is (presumably) his genuine opinion.

The degree to which factual knowledge is de-emphasized and even disparaged in educational circles usually comes as a surprise to most parents and taxpayers. After all, school is generally assumed to be as a place where students learn specific knowledge and skills so they eventually become productive citizens.

Instead, teachers are told in faculties of education and professional development sessions that they are simply “guides on the side” who facilitate the creation of new knowledge by students. This is where failed innovations such as fuzzy math, whole language, and open-area classrooms find their root. At the heart is a bizarre notion that there is little need to impart specific factual knowledge to students.

However, despite the widespread acceptance of this ideology by education professors and education department officials, there is remarkably little evidence supporting it. In fact, the weight of the research evidence comes down squarely on the side of those who advocate for the direct instruction of specific factual knowledge (Zwaagstra, 2010, para 3-5).

His highly emotive writing style and generalisations are used to great effect, and certainly impart his own feelings regarding the situation, but the most interesting paragraph for me is the

last one. Firstly, I spent considerable time on the search engines at Uni, and I entirely disagree with the entire paragraph; it completely contradicts my own experiences in research. For example, the website ‘learning from experience.com’ has a library with a four volume bibliography containing over 5,000 articles (mostly peer reviewed) regarding *experiential learning*<sup>16</sup>.

My own research in the search engines at Uni led me to a large number of articles in support of what I had considered to be *experiential learning*, and from a wide variety of perspectives. In creating an annotated bibliography, however, I found myself stymied by a number of problems. One was definition, i.e., what counts as *experiential learning* (see below for a more detailed discussion). Another problem I found was in deciding which studies should count as being in support? For example, one study, entitled “Does Discovery-Based Instruction Enhance Learning?” (Alfieri et al., 2010)<sup>17</sup> compared two meta-analyses based on 164 studies. One meta-analysis compared entirely unassisted discovery with explicit instruction, the other compared guided discovery with other instruction (e.g., explicit, unassisted discovery). In the first case explicit instructional outcomes were more favourable, in the second, guided discovery was more favourable. Would this count as *experiential learning*? Would this count as being “evidence”? It would be interesting to know what Zwaagstra would think of such an article as it indicates that there is significant research demonstrating that “the direct instruction of specific factual knowledge” is inferior to “guided discovery”.

The fact that there is considerable research demonstrating that using only direct instruction is significantly less effective than using a more balanced approach (as will be

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<sup>16</sup> <http://learningfromexperience.com/research/> This is a website set up by Kolb and Kolb (see below for an in-depth discussion). Each volume is called an ‘Experiential Learning Theory Bibliography’, which initially led me to believe they were all related to Kolb’s work. This is not the case.

<sup>17</sup> There will be more discussion on this article in section 4 below.

illustrated below) makes me wonder what terms Zwaagstra used in his search for research outside direct instruction, and also what he counted as being “evidence”. One of the problems I found, was that there are no agreed terms. If one wants to compare *direct instruction* to something, what terms does one use?

Zwaagstra frequently uses the word *constructivist* to refer to anything outside of the transfer of factual knowledge, so perhaps that was the word that he used. If so, the results would have been very limited. In my experience, although the term *constructivism*<sup>18</sup> is used in philosophical discussion and research, it is not a common way to refer to classroom activities in K-12, as Zwaagstra is here. In fact, a search such as this would have discounted many, if not all, of the over 5,000 articles collated on the website mentioned above, and all of the studies in the Alfieri et al. article mentioned, which used the terms *unassisted discovery*, *assisted discovery*, and *explicit instruction*.

As mentioned earlier, there are many different terms that are used to refer to what I call *experiential approaches*, which makes comparison difficult. Also, most of the articles I read that discuss alternative methods (i.e., alternative to direct instruction) involve some (varying) amount of direct instruction as well--the recommendations are usually advocating for more of a balance than is offered in many schools. Zwaagstra describes his definition of *constructivism* thusly: “In essence, constructivism encourages students to construct their own understanding of the world around them, and reduces teachers to mere learning facilitators” (Zwaagstra, 2011, para 2).

Perhaps the problem here is that Zwaagstra limited his search to, on the one side, research on learning with exclusively constructivist approaches that involve no teacher, and on the other

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<sup>18</sup> “My understanding is that *constructivism* refers to the process by which any individual tries to make sense of the world around her or him. Both its supporters and its critics, however, often ignore the fact that direct instruction can be just as much a part of the process by which we make meaning as any number of other experiences” (Dr. R. Bérard, comment, July 2016).

everything else; or perhaps his definition of “direct instruction of specific factual knowledge” actually includes lots of *experiential activities*. It could also be true that he didn’t do searches himself, and was simply quoting someone else when he referred to that research (i.e., someone else told him that the research was all on the side of direct instruction, and he simply believed them).

In any case, this is an illustration of how discussions on education can be very confusing, emotive, and politicised (“parents and taxpayers... productive citizens”, Zwaagstra, 2010, para 3), coloured with misperception (“At the heart is a bizarre notion that there is little need to impart specific factual knowledge to students”, Zwaagstra, 2010, para 4), and bogged down in dichotomous arguments that do not necessarily even have a basis in reality (“the weight of the research evidence comes down squarely on the side of...”, Zwaagstra, 2010, para 5)<sup>19</sup>. It also demonstrates how easy it is to misunderstand or manipulate related concepts when we do not have clearly defined terms, and how this is all then shapes public perception when it filters down into newspapers and conversation.

What was initially simply an exercise in finding localised terminology for *experiential education* became more of an investigation into where the roots of our confusion began. The following paper is the results of my investigations thus far.

### **3. Basic definitions and literature review:**

#### **Dictionary Definitions**

As mentioned above, there are many schools of thought on exactly what is meant by *experiential education*. As may be presumed from the term *experiential education*, however, a

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<sup>19</sup> See full quote on page 18, above.

relationship to experience lies at the heart of all of them. As starting point for a greater understanding of experiential education then, it may be helpful to look at the meaning of the word *experience*. The on-line *Oxford Dictionary*<sup>20</sup> defines it thusly:

As a noun:

1 Practical contact with and observation of facts or events:

1.1 The knowledge or skill acquired by a period of practical experience of something, especially that gained in a particular profession

2 An event or occurrence which leaves an impression on someone

As a verb:

1. Encounter or undergo (an event or occurrence)

2. Feel (an emotion or sensation)

It is important to note that *experience* is defined simultaneously as interaction with facts or events, and as the knowledge or skill learned through those events; it is also used both as a noun and a verb.

A further investigation into the word reveals an interesting history. According to the *Oxford English Dictionary (OED)* (1989, p. 563-4) the roots of the word lie in the Latin *experientia*: to try, to put to the test. It is listed twice in *OED*, once as a noun (with 9+ definitions) and once as a verb (with 3+ more definitions). The first (now obsolete) noun definition refers to *the action of putting to the test, trial; an operation performed in order to ascertain or illustrate some truth; and experiment*. The second noun definition (also obsolete) is *proof by actual trial, practical demonstration*. This second definition is considered to have passed into an equivalent of the definition listed above. In the *OED*, examples are given of the word first coming into use in the 14-15 Century.

As part of the ninth noun definition of experience, the *school of empiricism* is listed.

Although the on-line *Oxford Dictionary*<sup>21</sup> defines empiricism as “the theory that all knowledge is

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<sup>20</sup> References for all Dictionary terms can be found in the Reference section of this paper, listed under the term itself e.g ‘experience’ <http://www.oxforddictionaries.com/definition/english/experience> as there is no author listed.

based on experience derived from the senses”, looking in the OED indicates quite a different connotation to the word. Unlike the roots of the word ‘experience’ which come from the Latin, the roots of the word ‘empirical’ come from the Greek word for experience: *empeiria*. The definitions for the word *empirical* (and the related *empiric* and *empiricism*) in the OED (1989, p. 188-9) indicate that the word is not used simply as an objective description. The word empirical has four definitions, the first two of which describe medical “quackery” and adopting remedies “the reason of its efficacy being unknown”; the third being:

In matters of art or practice: that is guided by mere experience, without scientific knowledge; also in opprobrious sense: ignorantly presumptuous, resembling or characteristic of a charlatan. (p. 188)

This is also followed through under the word *empiric*: 1. A member of the sect among ancient physicians called *Empirici* who drew their rules of practice entirely from experience, to the exclusion of philosophical theory. 2. An untrained practitioner in physic or surgery; a quack. 2b. a pretender, imposter, charlatan.

The complications related to defining the word can start to be seen here then--even in simple definition. When traced back to the Latin roots the word *experience* is based in conscious experiment, and relates to both knowledge and events; while the Greek roots lead us to schools of thought and practice that refer to practical reality versus theory in a hierarchy, with an implication of a lack of reason and fakery relating to the former - “mere” experience.

Further to the initial definition of experience, above, it is also of interest to note the distinction between knowledge and skill. The on-line Oxford Dictionary<sup>22</sup> defines *skill* as: “1 The ability to do something well; expertise”.

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<sup>21</sup> <http://www.oxforddictionaries.com/definition/english/empiricism>

<sup>22</sup> <http://www.oxforddictionaries.com/definition/english/skill>

While *knowledge*<sup>23</sup> is defined as:

- 1 Facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject
  - 1.1 The sum of what is known
  - 1.2 Information held on a computer system.
  - 1.3 Philosophy: True, justified belief; certain understanding, as opposed to opinion.
- 2 Awareness or familiarity gained by experience of a fact or situation.
- 3 (archaic) Sexual intercourse.

Careful review of the definitions listed above reveal distinctions that could be said to lie at the heart of the following essay. For example, in definition 1 there is a clear distinction made between *experience* and *education*, with both leading to *knowledge*. It is also apparent that *theoretical or practical understanding* are both considered to be *knowledge*, and are clearly not considered equivalents of each other. As noted in the OED (1989), this is because the word *know* is now used in place of several nouns and verbs that had roots in other languages, therefore:

To know may mean either to perceive or apprehend, or it may mean to understand or comprehend... Thus a blind man, who cannot *know* about light in the first sense, may *know* about light in the second, if he studies a treatise on optics. (p. 512)

One can see that differing levels or types of experience are involved in this description, which reflect different uses of the terms.

In the same way, one could compare definitions 1.1, 1.2, and 1.3 above. Firstly, if it is true that *information held on a computer system* should be considered *knowledge*, compare this to definition 1.1 or 1.3. Does the information on a computer system represent *the sum of what is known* or *certain understanding, as opposed to opinion*? Definitely not. I provide no reference here as it is well known that the internet is full of opinion and misinformation--not to mention knowledge that can not be found there. Certainly, it is clear that these definitions reflect different and conflicting aspects of the word *knowledge*. As with the definition of 'experience' above, the

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<sup>23</sup> <http://www.oxforddictionaries.com/definition/english/knowledge>



fact that these contradictory definitions are embedded in our modern use of the word can make it difficult to discuss the concepts that the words distinctly represent, much less the ones they are not directly related to.

Epistemology, or exploring and debating exactly what *knowledge* is, and how it is stimulated and generated, could be said to lie at the heart of philosophy (and educational philosophy) for centuries, starting with Socrates. As will be seen, various schools and groups have long parsed definitions and terms relating to their own schools of thought and research, which seems to have contributed to the complexity and lack of clarity about experiential education today.

### **Disclaimers**

Plato is one of the most famous philosophers from Ancient Greece, and perhaps needs no introduction. It is beneficial at this point to indicate, however, that the format for Plato's dialogue involves Socrates as the main speaker. There is therefore much debate about exactly whose thoughts are represented in his books (Nails, 2014), but this discussion will not be entered into here. It should be understood that in the following essay, when Socrates is referred to or quoted, I am referring to Plato, the author, writing as the character Socrates.

I will also confess now that I am entirely unfamiliar with Ancient Greek, and therefore rely entirely on translators and commentators. By reading various versions of the same works-- some of which were considerably different from one another - it became very clear to me that I am wading through complicated territory. Whole books have been written on the meaning of a single Greek word as used by various philosophers, and these do not necessarily end in consensus (e.g., A. Nightingale's *Spectacles of Truth in Classical Greek Philosophy*, 2004). I am

not the first to struggle with these issues, as Jeannie Kerr (2010) notes in her treatise on phronesis:

There are difficulties in sourcing an ancient scholar that require certain considerations. Since Aristotle is not here to respond to questions or elaborate his ideas, or to re-contextualize his ideas in a historical sense, Neo-Aristotelian authors take up that challenge. Rarely, if ever, are these authors working on just one concept but are often touching on and refining various concepts in relation to the wider Ethic. Further as Jana Noel (1999) points out, various authors translate words differently in line with the focus with which they approach the topic. (p. 3)

I will nonetheless take what meaning as I can, and hopefully come to some understanding of what this exploration brings to light.

### **Digging Deeper (Literature Review)**

When reviewing the history of Western Philosophy, the taproots of our modern conversations can be seen back in Ancient times. There is neither the space nor the need to go into these great writers and thinkers in any depth here, their ideas will be merely touched on to provide some context for this discussion. It is difficult to draw exact parallels in brief language due to the evolution in thought, language and customs that has taken place since then, but it is both useful and interesting to look back into these early written explorations of thought, and then to follow them through to 21<sup>st</sup> century discourse.

One of Plato's most famous works is the *Republic* (trans. 1952), which starts off initially as an exploration of the concept of justice. This exploration quickly expands into concepts of a just state (Utopia) and what circumstances could make this state possible. These ideas will not be gone into here, but through these discussions, Plato explores concepts of knowledge and reality that are relevant to our conversation on the definitions of experience. In Book V, for example, Glaucon and Socrates are in conversation, working slowly towards the definition of *philosopher*. Initially a definition is put forward of "a lover, not of a part of wisdom only, but of the whole"

(475b). After establishing that “he who has a taste for every sort of knowledge and who is curious to learn and is never satisfied” (475c) would be a mere imitation philosopher, the revised definition is given that a true philosopher is a “lover of the vision of truth” (475e). Careful discourse then continues, establishing the difference between knowledge and opinion, truth and illusion. Bertrand Russell, in his *History of Western Philosophy* (1961), summarises Plato’s theory of ideas from the *Republic* including this description of opinion versus knowledge:

Particular things always partake of opposite characters: what is beautiful is also, in some respects, ugly; what is just is, in some respects, unjust; and so on. All particular sensible objects, so Plato contends, have this contradictory character; they are thus intermediate between being and not-being, and are suitable as objects of opinion, but not of knowledge. ‘But those who see the absolute and eternal and immutable may be said to know, and not to have opinion only’... Thus we arrive at the conclusion that opinion is of the world presented to the senses, whereas knowledge is of a super-sensible eternal world; for instance, opinion is concerned with particular beautiful things, but knowledge is concerned with beauty in itself. (p. 122)

Plato’s notion of knowledge is one of those (mentioned above) that does not have an exact parallel to our own, in that his contains implicit spiritual concepts not necessarily contained in contemporary definitions of knowledge. These include transcendental concepts of goodness, morality, and his theory of forms. Although these ideas are of interest, and can be traced through the years into later Christian concepts of knowledge, with limited space for deeper exploration, it should simply be noted that Plato makes this distinction between knowledge derived from contemplation, and knowledge derived from sensual experience; and that the former is true knowledge and leads to wisdom, while the latter is illusion and is not to be trusted.

According to Russell, these particular elements of Plato’s thinking were not unique to him, but were passed down from philosophers that came before him: “From Heraclitus he derived the negative doctrine that there is nothing permanent in the sensible world. This,

combined with the doctrine of Parmenides, led to the conclusion that knowledge is not to be derived from the senses, but is only to be achieved by the intellect” (ibid., p.109).

This division between, and superiority of the intellect over the senses also extends into Plato’s discussions of education and occupation: the contemplative life, filled with consideration of pure mathematical principles and higher thoughts was considered to be superior in every way to a practical life of work and application of skill. This can be seen embedded throughout the book (e.g., Book IV, 440-441) in such things as his division of the classes with related “principles of the soul”, i.e., reason and knowledge with the philosophers; spirit and honour with the warriors; and desire and pleasures with the commoners (*Republic*, Book IV), or when Socrates says that when any man from one class tries to move into another class for any reason, including “having his heart lifted up by wealth or strength or the number of his followers, or any like advantage, or attempts to force his way” into another class it is the “ruination of the state” (ibid., Book IV 434b). Russell states “Plato, in common with most Greek philosophers, took the view that leisure is essential to wisdom, which will therefore not be found among those who have to work for their living, but only among those who have independent means or who are relieved by the State from anxieties as to their subsistence” (1961, p.110). As Russell points out, the underlying perspective here is essentially aristocratic.

There are many other examples of this division embedded in Plato’s considerations, highlighting his opinions, such as when he says that “he whose desires are drawn towards knowledge in every form will be absorbed in the pleasures of the soul, and will hardly feel bodily pleasure (*Republic*, Book VI, 485b), in his description of math in which he states “.arithmetic has a very great and elevating effect, compelling the soul to reason about abstract number, and rebelling against the introduction of visible or tangible objects into the argument” or in his

‘hymn of dialectic’ in Book VII “...when a person starts on the discovery of the absolute by the light of reason only, and without any assistance of sense, and perseveres until by pure intelligence he arrives at the perception of the absolute good, he at last finds himself at the end of the intellectual world...”(532a).

It is interesting to note that, although Plato and Socrates seem to have had these firmly held ideas regarding the value of peaceful contemplation and the wisdom attained through it, the Socratic teaching method was not one of lectures and contemplation, but one that actively engaged the learner. Socrates is well known for using and developing the Socratic method of asking questions to students and engaging in discourse (called dialectic) instead of merely giving them information. Rather than teaching facts, in some of Plato’s works the goal of Socrates’ approach was to engage people in reflection and debate. In the *Apology*, Socrates, in his famous “gadfly” approach<sup>24</sup>, describes wisdom and knowledge thusly:

...although I do not suppose that either of us knows anything really beautiful and good, I am better off than he is, - for he knows nothing and thinks that he knows; I neither know nor think that I know. In this latter particular, then, I seem to have the slight advantage of him (Trans. 1952, 21d).

Socrates, as he is represented in the *Apology*, could be described as having a theory of knowledge based on the fact that, there being “no criterion for truth... we can never know anything for certain” (Perkinson, 1980, p. 19), and as therefore being “a teacher who did not teach” (ibid., p.11)<sup>25</sup>.

The confusion of Socrates and Plato as people and writers alluded to above (i.e., Plato writing dialogues from the perspective of Socrates) is compounded in this area in his later works,

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<sup>24</sup> In the *Apology* Socrates call himself an irritant to Athens in the same way a gadfly is to a horse, but a gadfly from God, stirring Athenians into awareness through Socratic debate (Trans. 1952, 31).

<sup>25</sup> “Socrates, I think, shared the notion that even if we could not know something for certain, that didn't mean nothing was certain. In other words, Truth exists, whether we can fully apprehend it or not” (Dr. R. Bérard, comment, July 2016).

as Plato has Socrates describing knowledge and teaching as being achievable through revelation.

These are sometimes referred to as *socratic* and *platonic* approaches to differentiate between them<sup>26</sup>. For example, in the *Meno* Plato has Socrates explain:

The soul, then, as being immortal, and having been born again many times, and having seen all things that exist, whether in this world or in the world below, has knowledge of them all; and it is no wonder that she should be able to call to remembrance all that she ever knew about virtue, and about everything; for all nature is akin, and the soul has learned all things, there is no difficulty in her eliciting or as men say learning, out of a single recollection all the rest... (Trans., 1952, 81d)

This interaction with someone wise in their understanding of the forms could help a student tap into their own innate inner knowledge. In the *Meno* Plato reveals that the soul holds the link to spiritual and eternal truth (as opposed to the worldly and untrustworthy information coloured by opinion that the senses reveal) and so saw this inner examination and revelation as the only way of increasing knowledge and virtue. So, in the *Meno*, Plato can be described as saying that “the teacher teaches what is good and what false, what is just and what unjust, what is good and what evil” (Perkinson, 1980, p. 22). This revealed truth makes the teacher an absolute authority.

To clarify (or complicate), Plato was the author of books explaining on the one hand, that, although we can learn, nothing can be known or taught except that we do not know, and on the other hand explaining that everything is both known and forgotten, and we can be taught to remember, but that we need the help of particular teachers in order to truly learn.

Continuing in this light of highlighting the paradoxes of these philosophies, Plato is well known for his famous cave allegory (*Republic, Book VII*), in which it is made clear that the senses--and therefore experience--cannot be trusted. However, in the same book his description

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<sup>26</sup> i.e., *Socratic* referring to the idea that although truth and knowledge exist, humans know nothing; *Platonic* referring to the idea that knowledge is already within us and can be accessed through revelation.

of a good education was not one made up of pondering and contemplation. The curriculum for his philosopher king-in-training was detailed in the *Republic* and involved many years of education: "...after they spend fifteen years studying arithmetic, geometry, stereometry, astronomy, harmonics, and dialectic, the philosopher-kings are subsequently trained for fifteen years in practical and political activities based on "experience" (*empeiria*, 539d-540a). Practical and experiential wisdom, then forms a crucial part of the theoretical life taken as a whole"<sup>27</sup> (Nightingale, 2004, p. 117).

Plato's student Aristotle went on to explore the differences between what he calls *perceiving* (information through the senses, of which he counts five) and various types of thinking and knowing. He does not completely agree with Plato's proposal of innate and perfect knowledge (forms) accessed through dialectic and a philosopher teacher, but suggests that the truth of objects can be found within themselves--accessible through the senses. He explains that we are born as blank slates that life and experience are written upon, and consider through our intellect. (*On the Soul*, Book III, chapter 4, trans. 1952). It has to be said that Plato does not entirely disagree with this inasmuch as he did say that anything in youth "assimilates itself to the model whose stamp anyone wishes to give to it" (Plato, *Republic*, 377b). However, Aristotle's ideas move him in slight disagreement with the idea that sense experience was absolutely not to be trusted.

Aristotle considers there to be truth in the world around him, but he nonetheless distinguishes between knowledge attained through the senses, and that attained through other means (e.g., action, contemplation). He also agrees with Plato's aristocratic concept of the superiority of thinking over doing (as did the Greeks in general), holds the doing of things in disdain, and agrees that contemplation and the wisdom attained through it is the highest ideal. In

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<sup>27</sup> See Definition table below.

*Nicomachean Ethics (NE)* Aristotle explains that “if it is true that intelligence is divine in comparison with man, then a life guided by intelligence is divine in comparison with human life...we should therefore try to become immortal as far as that is possible and do our utmost to live in accordance with what is highest in us” (Trans. 1962, p. 290, 1177b-1178)<sup>28</sup>. He goes on to propose that insofar as the gods exist and are active, but not with the goal of production or thoughtful action, “therefore, the activity of the divinity which surpasses all others in bliss must be a contemplative activity, and the human activity which is most closely akin to it is, therefore, the most conducive to happiness” (NE, 1179a). As Bertrand Russell notes in reference to Aristotle’s recommendations for the education of the citizens “they must, of course, learn to read and write, in spite of the usefulness of these arts. But the purpose of education is ‘virtue’, not usefulness” (1961, p. 187).

As with Plato, it is important to note that despite making numerous statements full of disdain for the slaves and lower classes who ‘do’ things versus the superiority of the citizens of the aristocracy who should attain the goals of philosophy, Aristotle also values experience.

In every field, it is those who are experienced that judge its products correctly, and are privy to the means and the manner in which they were accomplished and understand what combinations are harmonious. The inexperienced, on the other hand, must be satisfied if they do not fail to recognise whether the work has been produced well or badly...We do not even find men becoming medical experts by reading textbooks... Though their books seem useful for experienced people, they are useless for those who do not have the requisite knowledge. (NE, Trans. 1962, p. 301)

The value Aristotle placed on experience can also be shown through taking a closer look at his definitions of related concepts.

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<sup>28</sup> Aristotle spends considerable time defining and discussing animals, humans and God and distinguishing between them. In *Metaphysics* he describes how by thinking on a subject “thought thinks on itself because it shares the nature of the object of thought, so that thought and object of thought are the same” (1072b, 15 – 30). In this way we can become like the divine through the action of contemplation.



As mentioned earlier, when considering great works emanating from Ancient Greece, one of the difficulties is that our modern views on religion and spirituality are considerably different in the modern world than they were 2000 years ago. Another complication, when working in English at least, is the limited vocabulary of the English language. Translating any work into another language is difficult, but in this case there are numerous words intrinsic to the concepts being discussed that simply do not exist in English. To complicate matters, not only do translators each subtly shape the meanings according to their own understanding, Aristotle himself varies his use and definition of terms--sometimes within the same book--despite the fact that he spends considerable time spelling out basic definitions and relationships of words and concepts in his various works.

In his book *Nicomachean Ethics*, Aristotle carefully lays down the definitions of words related to the development of ethics, which include those related to intelligence and thinking. For Aristotle, the defining feature of man is reason (Trans. 1962, 1098a). In his way of thinking, men share the life of nutrition and growth with all living things; men share sense perception with animals; but men alone have the capacity to reason.

There are many of Aristotle's definitions and divisions of words and related concepts that would add to an etymology of *experience*, but there are a few that seem to be quite key. The two tables below are my own attempts to lay out my understanding of these terms; further explanation will follow.

<b>Two Types of Wisdom</b>	
<p><b>Phronesis</b>                      Practical wisdom; moral intelligence; relates to changing reality; knowledge of particulars</p> <p>One of two parts of the rational element in that it obeys the rules of reason.</p> <p>Part of what separates us from the animals and also from the gods.</p>	<p><b>Sophia</b>                      Theoretical wisdom; relates to concepts and unchanging reality; knowledge of universals</p> <p>One of the two part of the rational element in that it possesses and conceives rational rules.</p> <p>The wisdom we share in common with the gods.</p>
<b>Definition of Empeiria</b>	
<p><b>Empeiria</b> – experience; involves memory when related to learning; something more than mere repetition/ habit; distinct from Pathos (see below)                      Sense perceptions + sense perceptions = memory; Memories + memories = experience                      Experience linked to development of both theory <u>and</u> practice, thus Phronesis and Sophia in men (as opposed to gods)</p>	
<b>Two definitions to clarify empeiria and wisdom/knowledge</b>	
<p><b>Pathos</b> – anything that befalls you</p>	<p><b>Doxa</b> - opinion</p>

Table 1 Aristotle’s Terms




5 intellectual virtues		3 approaches to knowledge/ kinds of knowledge	Empeiria Interaction of knowledge, memory and action in perpetual cycle	3 kinds of action
<b>Phronesis</b> Practical wisdom; prudence; seat of ethics, morals; knowing what to do, at the right time and in the right way. Relates to the individual.		<b>Phronesis</b> Practical wisdom; practical knowledge; applied knowledge; needed to be truly ethically and moral being; requires <i>empeiria</i> (Nic Mac 1142a)		<b>Praxis</b> Purposeful doing; doing with the goal of action (the action has an intrinsic purpose); practice with the goal of doing it right  Example: Politics
<b>Techne</b> Craftsmanship; Skill; knowledge related to production (something greater than what is learned through repetitive habit)		<b>Techne</b> Technical, productive knowledge applicable to a specific or general art or craft (aspects of which can also be included in episteme)		<b>Poiesis</b> Productive doing; doing with the goal of producing  Example: Making a pot
<b>Episteme</b> Disinterested understanding; knowledge for its own sake		<b>Episteme</b> Scientific knowledge gained through learning, rhetoric, contemplation (can also include Techne)  Note: experiment was not a part of science at this time	 This link is less defined; sometimes there is stated or implicit link (e.g., re: rhetoric, dialectic), other times empeiria is used specifically in reference to sensory world.	<b>Theoria</b> Activity of the mind; thoughtful contemplation; goal of knowledge itself  Example: Mathematics
<b>Nous</b> Intellect, intuition, helps us grasp first principles				
<b>Sophia</b> Wisdom; theoretical knowledge; episteme and nous combined to help achieve highest truths and wisdom; concerning universal truths.				

Table 2 Aristotle's Terms, detail

In his efforts to discuss the ethical life, Aristotle made a careful delineation between the practical and theoretical; doing and thinking. He referred to the two related faces of wisdom as *phronesis*, and *sophia*, and described them as being “the two parts of the rational element” (NE, Trans. 1962,1098); the former rational in that it obeys the rules of rational thinking, the latter rational in that it possesses and conceives rational rules.

According to M. Ostwald, translator of NE (1962), *phronesis*, implies “wisdom in action, and hence a moral intelligence, practical wisdom” (p.12); it includes a capability of rational thinking, but about individuals. *Sophia*, on the other hand, refers to “theoretical wisdom”(p.13); wisdom for its own sake; reasoning concerning universal truths. As Nightingale put it “Aristotle distinguishes practical from theoretical reasoning in NE by asserting that the former deals with things that are ‘expedient,’ ‘good for humans,’ and ‘good for the individual himself,’ whereas the latter is ‘superhuman’ and unconcerned with ‘what is good for human beings’” (2004, p. 221)<sup>29</sup>.

Aristotle held that there are five principles of thought, or moral and intellectual virtues, three of which represent what he considered to be the three kinds or pathways to knowledge: *phronesis*, *techne*, and *episteme*. *Phronesis* concerns practical knowledge and ethics; *techne* concerns technical knowledge, craftsmanship and skill; and *episteme* represents scientific knowledge, the theoretical (this does not relate to our modern version of science, which is based on experiment and research, but on the ancient Greek concept). In very simple terms, *techne* could be seen as ‘know-how’, *episteme* as ‘know-why’, and *phronesis* could be seen as ‘knowing what, when and where’.

As seen in the table, Aristotle related specific types of action with each of the kinds of knowledge, all of which could help develop thinking and lead to wisdom.

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<sup>29</sup> References for Nightingale’s quotes: 1141b2-12, 1140a25-8, 1140b4-6, 1141b29-30, 1142b31-3

*Techne* relates to *poiesis*, which is about productive action--action that is done to create to create an extrinsic result e.g., fixing a car; making a cake; diagnosing a sick person to create health.

*Theoria* is the action related to *episteme*, and is about thinking and contemplation; action done to create knowledge valuable in itself (i.e., not applied knowledge); e.g., mathematical calculations, philosophy. Finally, *praxis* is related to *phronesis*, and is about thoughtful, practical doing; moral action, conduct; action that has value intrinsic to the action itself e.g., politics, citizenship, mastery of something that does not have a physical outcome (i.e., not a pot)<sup>30</sup>. He also clearly defines the difference between *praxis* - active participation and *pathos*--anything that befalls a person (*NE*, Trans. 1962, p. 311). It should also be noted that he held that humans are capable of both thoughtful and thoughtless interaction with the world, with other subtleties like *memory* making a contribution to differences in perception

There are some words that both Plato and Aristotle used, but used differently. I will only mention one for now, which is also listed in the table: *doxa*, or opinion. As mentioned above, Plato placed no factual value on the physical world, so for him *doxa* was untrustworthy and not to be seen as true. Aristotle, however, said that *doxa* could be either true or not true (*Posterior Analytics*, Trans. 1952, 89a1).

The final word to be discussed in the table is the word *empeiria*, or experience. This is one of the words I mentioned earlier, that Aristotle defines loosely and uses in various ways. To illustrate the difficulties in pinning down exactly how Aristotle saw it, I refer to two articles written on the subject: F.H. Heinemann (1941, p. 562) claimed Aristotle was the first to define the word 'experience'; while Gregoric and Grgic (2006, p. 1) state categorically that, not only did Aristotle not define experience, there were others that did so before his time.

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<sup>30</sup> I refer the reader back to my previous point on how entire books have been written on the definition and use of particular Ancient Greek words. It is not possible in this space to fully explain every aspect of Aristotle's use of terms; I will merely re-iterate that Aristotle is not consistent with his use and definitions of terms.

Although I could not locate a clear definition, there are many passages in which Aristotle alludes to the meaning of experience:

So out of sense perception comes to be what we call memory, and out of frequent repeated memories of the same thing develops experience; for a number of memories constitute a single experience. From experience again – i.e., from the universal now stabilised in its entirety within the soul, the one beside the many which is a single entity within them all – originate the skill of the craftsman, and the knowledge of the man of science, skill in the sphere of coming to be and science in the sphere of being. (*Posterior Analytics*, Trans. 1952, 100)

It is clear in that passage that he sees experience as the basis for both the practical and the theoretical. He sees value in experience alone, but also clearly delineates between experience, understanding and knowledge:

With a view to action experience seems in no respect inferior to art, and men of experience succeed even better than those who have theory without experience. But yet we think that knowledge and understanding belong to art rather than to experience, and we suppose artists to be wiser than men of experience; and this because the former know the cause, but the latter do not... And in general it is a sign of the man who knows and of the man who does not know, that the former can teach, and therefore we think art more truly knowledge than experience is; for artists can teach, and men of mere experience cannot. (*Metaphysics*, Trans 1952, 981a, b)

One can see that the concept of experience was quite broad for Aristotle, in that it was a kind of layering up of memory that provided the foundation for all learning; also, it is distinct from the idea of *pathos* unlike the English word *experience*. Certainly, Aristotle had considerable trust in the evidence/experience of his senses--despite his claims otherwise--as he has his name on many books on biology, marine biology, meteorology etc. all based on his observations of the world around him.

Aristotle's lack of clarity on the world seems to be in accordance with that of the ancient world in general, as Atwill points out in *Rhetoric Reclaimed*:

*Empeiria* is generally translated “experience,” but it also refers to “practice” – even “craft” ...For Plato, *empeiria* has only negative connotations; it is mere knack as opposed to true knowledge. Other traditions, however, ground *techne* in *empeiria*, for it is *empeiria* that separates the knowledge of such arts, medicine, rhetoric, and seafaring from the deductive inquiry of philosophy. (1998, p. 79)

I will use one final Aristotelian quote to illustrate that according to Aristotle’s use of the word, experience was central to higher learning, even for a philosopher (i.e., a master of *Sophia*).

While young men do indeed become good geometricians and mathematicians and attain theoretical wisdom in such matters, they apparently do not attain practical wisdom. The reason is that practical wisdom is concerned with particulars as well as with universals, and knowledge of particulars comes from experience. But a young man has no experience, for experience is the product of a long time. In fact, one might also raise the question why it is that a boy may become a mathematician but not a philosopher or a natural scientist. The answer may be that the objects of mathematics are the results of abstraction, whereas the fundamental principles of philosophy and natural science come from experience. (NE, Trans. 1962, 1142a)

Joseph Dunne, in his *Back to the Rough Ground* points out that, in the case of phronesis

It arises from experience and *returns to experience*. It is, we might say, the insightfulness – or, using Aristotle’s own metaphor, “the eye” – of a particular type of experience, and the insights it achieves are turned back into experience, which is in this way constantly reconstructed or enriched. And the more experience is reconstructed in this way, the more sensitive and insightful phronesis becomes – or, rather, the more the experienter becomes a *phronimos*. (1993, p. 293)

Even the ‘experts’ do not seem to have an easy task discussing what Aristotle meant when he used these words, and, by reading expert commentary, it is clear that the Ancient Greeks were not any more unanimous in their ideas of the world than we are today. For example, Nightingale’s *Spectacles of Truth in Classical Greek Philosophy* (2004) is a book entirely devoted to the word *theoria* and related concepts, in which she makes it very clear that, not only did Plato and Aristotle differ in their use of the word, but a great many other people both before and since do as well. Nightingale points out that “Plato does not offer a philosophic analysis of

this activity, but he repeatedly emphasizes the link between theoretical contemplation and virtuous action in books V – VII<sup>31</sup> (p. 129). One of the observations she makes regarding the *cave* allegory<sup>32</sup>, is that Plato is describing *theoria* when he describes the philosophers journey from the cave, and that this results in *praxis* when the philosopher returns (ibid., p. 116-7).

Despite this lack of clarity on definitions, however, and his hierarchical placement of Sophia over Phronesis; contemplation over action; Aristotle, like Plato, clearly values action and experience, and places it at the heart of the processes of learning and knowledge building that he describes. Thus Aristotle's work contained this contradiction, like Plato's, that although he wrote of this lofty goal of living like the gods in the state of contemplation, he also wrote that only someone with knowledge based in experience could actually be a good and knowledgeable person. To him it was clear that there was a link between the practical and the theoretical, but he drew a hierarchy between them demonstrating the superiority of the aristocracy (who would only do things to help them learn and understand) over the inferior slaves (who did things because that is what they were born to do) (Russell, 1961, p.187).

These concepts of distinguishing levels of knowledge, the contribution of experience to wisdom and knowledge, and of knowledge gained through the senses versus that gained through reflection and contemplation will be seen to recur throughout the history of philosophy, science and educational thinking.

Moving through time, the broadening of educational ideas began to take place slowly through philosophical debate. Six hundred years after Socrates, Augustine of Hippo was an early Christian thinker who made significant contributions to both philosophy and theology, however

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<sup>31</sup> the Republic.

<sup>32</sup> Very briefly, the cave allegory tells the story of people trapped in a cave in such a way that they only see the shadows of the real world, leading them to believe that the shadows are reality. The dialogue explores the idea of what would happen if one of these people were to escape the cave, discover reality, and then return to share their discoveries.



he also gave some indications for teachers of the day. At the time, students were generally taught through the rote memorisation of Latin and Greek and the translation of ancient religious and philosophical texts (by authors such as Plato and Aristotle), i.e., “literary studies (usually called rhetoric) and philosophy” (Perkinson, 1980, p. 36).<sup>33</sup>

In the second and third centuries, Augustine wrote about his beliefs relating to knowledge and learning - that as God created outer reality and lives within each person's soul, students can depend on their experiences as being true to a greater degree than believed before (Puolimatka, 2005, p. 191-192). Aristotle wrote that information received through the senses can be trusted to a greater degree than Plato believed with his vision of truth in forms; it was Augustine's deeply held Christian beliefs that allowed him to trust his senses to an even greater degree, enabling him to espouse a step away from purely information-based to experience-based learning for students.

In his book *The Teacher* (trans.1968) Augustine gives an example of a student being taught the term for a kind of head covering--a saraballae--in the context of a story<sup>34</sup> (ibid., p. 47 – 50). He explains that all other aspects of the story can be understood – "three boys," "furnace," "fire," "king," and, finally, "unharmd by fire", (ibid., p. 50) and says that until students experience for themselves what the saraballae is, they would have been merely taught a symbol and gained no real knowledge. Having experienced the saraballae, however, they could be said to know it. Augustine called this kind of learning “sensible knowledge” (Perkinson, 1980, p. 48) as it was gained through the senses, although he allowed that there was also another kind of knowledge—knowledge that was perceived by the mind rather than the senses —and called this “intelligible knowledge” (ibid., p. 48).

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<sup>33</sup> Augustine also contributed greatly to the conversion of the curriculum into a Christian context, but this will not be discussed here.

<sup>34</sup> From the Book of Daniel in the Bible.

Interestingly Augustine unwittingly illustrated the problem he was addressing by defining the term “saraballae” as a head covering. Augustine’s book (*The Teacher*), makes regular use of the word throughout his book to illustrate various points, making reference to its occurrence in the book of Daniel relating to three young men who were thrown in a fire and survived. This occurs in Daniel 3, and according to the *Douay-Rheims Bible and Latin Vulgate* version of the Bible<sup>35</sup>, the word *saraballae* does not occur here. The word *sarabara* does, however, and *Harper’s Latin Dictionary*<sup>36</sup> identifies *saraballa(e)* and *sarabara(e)* as synonyms. As one can see in the table, the word should be translated as garments rather than a kind of headdress.

#### Image 1 English and Latin text from Daniel

94	And the nobles, and the magistrates, and the judges, and the great men of the king, being gathered together, considered these men, that the fire had no power on their bodies, and that not a hair of their head had been singed, nor their garments altered, nor the smell of the fire had passed on them.	et congregati satrapae magistratus et iudices et potentes regis contemplabantur viros illos quoniam nihil potestatis habuisset ignis in corporibus eorum et capillus capitis eorum non esset adustus et sarabara eorum non fuissent in mutata et odor ignis non transisset per eos
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Image taken from the online Douay-Rheims and Latin Vulgate Bible<sup>37</sup>

In a further twist, according to the *Harper’s Latin Dictionary* (1879) both the word *saraballa(e)* and the word *sarabara(e)*<sup>38</sup> are translated into English as the word for “wide trousers such as are worn in the east”. Researching this is a complex process, as finding the

<sup>35</sup> Augustine’s reference Daniel 3:94. This was the numbering in the Douay-Rheims Bible and Latin Vulgate. Newer bibles number this as Daniel 3:27.

<sup>36</sup> As mentioned earlier, most Dictionary references can be found in the Reference section under the word itself. In this case, however, as the authors are known, it is listed under Lewis et al.

<sup>37</sup> <http://www.latinvulgate.com/lv/verse.aspx?t=0&b=32&c=3>

<sup>38</sup> see *Sarabara* in references.

original works to compare is not an easy feat, but it appears as though both Augustine and the translator of this chapter into Latin were confused by the very issue Augustine was trying to address--they had no experience of the word and they did not “know” the story (according to Augustine’s ideas of sensible knowledge), so had trouble understanding what it meant.

Like the Ancient Greeks, Augustine related the superiority of intelligible knowledge over sensible knowledge--and for the same reason, i.e., that it was revealed through God rather than through the sensory world that could be distorted by the senses. Nonetheless, he also points out that he cannot “know” people mentioned in the bible, or even whether the stories told in it are true--he can only “believe”<sup>39</sup> (*The Teacher*, Trans. 1968, p. 50). Augustine puts a limiter on what humans are capable of knowing; unlike the Greeks, however, this was not based on the untrustworthy nature of the world around us, but due to our individual natures. As Puolimatka describes it, Augustine felt that “human beings have a tendency to see reality distorted by their own desires and fears, and to seek to appear to themselves and others as better than they are” (2005, p. 192) which affects both knowledge and understanding. That being said, Augustine took a firm stand on how learning was linked directly to experience.

Down through the years after Plato, philosophers continued their conversations and debates on the definitions of knowledge, wisdom and the nature of reality. It is clear that educational methods were still founded on the principles of memorisation of text and information when Francis Bacon began to introduce his ideas regarding a new way of approaching knowledge. As he put it “Here therefore [is] the first distemper of learning, when men study words and not matter” (*The Advancement of Learning*, 1620/1900, p. 9).

Francis Bacon is a very good example of an early proponent of empiricism, although at the time the term was not in general use. By the time Bacon was alive (1521 – 1626 C.E.), there

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<sup>39</sup> To Augustine this is a superior contribution to understanding the Bible.

had already been clues that pure contemplation of truth could not be depended on to reveal the laws of the physical universe. Two thousand years previously, great thinkers such as Aristarchus of Samos proposed that the earth revolved around the sun (Aristarchus of Samos, 2016) while Aristotle, Hipparchus and Ptolemy held forth that the earth sat at the centre of the universe, with the sun, planets and fixed stars all revolving around it in perfect spheres. This latter view made a very beautiful, perfect and possibly godlike picture, but was entirely incorrect. In fact, it was so opposed to anything revealed by deep observation that over the centuries the theory had to become more and more complex to make allowances for all of the inherent contradictions (Astronomy 161, n.d.), yet in the 14<sup>th</sup> and 15<sup>th</sup> Century Europe that was the most commonly held view.

Due to the close relationship between education and religion of the day, and the prevalent theories of all knowledge coming from God, when Nicholas Copernicus<sup>40</sup> (1473 - 1543) and Galileo (1564 - 1642) tried to talk about their theories that we live in a sun-centred planetary system, they were subjected to castigation, book banning, accusations of heresy, and threatened with torture and/or imprisonment. It was in this culture that Bacon began describing and suggesting an approach to learning and knowledge that was based on observation and experiment--like the earliest definition of the word *experience* (see beginning of chapter 3, above).

Bacon was a religious man, a Christian, and, as with Augustine, this belief allowed him to find real truth in the world around him; he was also operating in a reality that had only recently disposed of both Copernicus and Galileo with short shrift. In *The Advancement of Learning*, Bacon made it very clear that God is in every case the first cause of everything (1620/1900, p. 3 – 6), and thus everything in the world of the senses can be trusted, known and

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<sup>40</sup> See Copernicus, n.d.

understood. He felt that studying nature leads back to God, rather than to atheism, but at the same time, the Bible and the study of Nature had to be kept separated--as “the contemplation of God’s works produces knowledge, though, with regard to him, not perfect knowledge, but wonder, which is broken knowledge (ibid., p. 5).

In his introduction to *Novum Organum* Bacon refers to two current perspectives of the day toward learning and knowledge as “Those who have presumed to dogmatize on nature”, considering everything to be known and themselves as the experts, and “those who have entered upon a contrary course and claimed that nothing at all can be known”<sup>41</sup> (1620/1900, p. 311). His proposal was to follow a third path inspired by “the more ancient Greeks (whose writings have perished)” who “held a more prudent mean between the arrogance of dogmatism and the despair of skepticism<sup>42</sup>... thinking, as it seems, that the better method was not to dispute upon the very point of the possibility of anything being known, but to put it to the test of experience” (ibid., p. 311).

Bacon suggested that those who were interested in deepening their own knowledge as well as creating new knowledge should start again, creating progressive stages of certainty, “to open and establish a new and certain course for the mind from the first actual perceptions of the senses themselves” (ibid., p.311) and thereby discovering what was truly to be known. He referred to him who would join him in his quest to be a “true son of sciences” (ibid., p. 313). Bacon is very well known for the development of a method of study, a three step process known as the *Baconian method*; in particular his use of induction and his recognition of the greater force of negative instance which led to our current scientific method<sup>43</sup>.

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<sup>41</sup> It is interesting to consider a kind of lineage to the Platonic idea of forms for the first – that all is known and is given us by God, and a twisted conception of Socratic notion of knowing nothing for the second.

<sup>42</sup> According to editors of above – Bacon used the Greek term ‘acatalepsia’ here, “a mark of ancient Sceptics”.

<sup>43</sup> See ‘Baconian Method’ in Reference section.

From his first Aphorism in *Novum Organum*, it is clear that Bacon trusts far more in his senses than Aristotle did:

Man, as the minister and interpreter of nature, does and understands as much as his observations on the order of nature, either with regard to things or the mind, permit him, and neither knows nor is capable of more (p. 315).

Bacon makes use of the word *experience* in various ways, sometimes as a synonym for practical knowledge, sometimes as an adjective to distinguish a man from a man of learning, and also more generically; e.g., his suggestion that in order to truly investigate his method, someone should become "...accustomed to the subtilty [*sic*] of things which is manifested by experience ..." (ibid., p. 314). The closest he comes to defining it<sup>44</sup>, however is when he says:

There remains but mere experience, which, when it offers itself is called chance; when it is sought after, experiment. This kind of experience is nothing but a loose faggot; and mere groping in the dark, as men at night try all means of discovering the right road, whilst it would be better and more prudent either to wait for day, or procure a light, and then proceed. On the contrary, the real order of experience begins by setting up a light, and then showing the road by it, commencing with a regulated and digested, not a misplaced and vague course of experiment, and thence deducing axioms, and from those axioms new experiments; for not even the divine word proceeded to operate on the general mass of things without due order. (p. 340)

In this way Bacon highlights the difference between *empeiria* and *pathos*—*the former being* purposeful, conscious experience and the link to learning, while the latter is anything that occurs in one's presence.

Moving firmly into the 17<sup>th</sup> Century, John Comenius was a Czech educationalist that was unhappy with the education of the day, and was inspired by Bacon's work. Based on Comenius' descriptions it is apparent that schools in his day had not taken on Augustine's educational principles of learning through experience, or Bacon's advice on creating new knowledge. In his chapter on Comenius, Perkinson describes *The Labyrinth of the World and the Paradise of the*

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<sup>44</sup> That I have found.

*Heart* as “Comenius’ first theological treatise”; Perkinson states that, in this book, Comenius is describing how “experience, or experientially based knowledge, should be the basis for true Christian piety” through the tale of a pilgrim in search of “the true calling of man” (Perkinson, 1980, p. 59).

In *The Labyrinth of the World and the Paradise of the Heart*, the pilgrim meets many characters on his journey, including Falsehood who introduces herself thusly “I am the interpreter of Wisdom, the queen of the world, and I have the duty to teach all how they can understand the things of the world” (1623/1901, p. 65). In a section entitled The entrance to study is difficult and painful, the pilgrim learns how few men make it into education, how rich they must be, and how most of them are then entirely deformed by the process of teaching “...for fists, canes, sticks, birch rods struck them on their cheeks, heads, backs, and posteriors till blood streamed forth...” (1623/1901, p. 116). These deformities of their senses prevented most of the educated men from seeing the reality of the world around them.

Comenius, like Augustine, saw Jesus as being the route through which humans could regain their faith in the world around them and thus genuine knowledge; as Perkinson described it “conversion to Christ will help men to distinguish true from false wisdom, vanity from knowledge” (1980, p. 61). So it was through their senses that Christians would know the world, and therefore God.

Although Comenius, like Aristotle, believed wholeheartedly that students were like empty pages awaiting a teacher to fill them up with printing (a then modern vision of Aristotle’s *tabula rasa*), his beliefs also led him to make several steps toward interactive learning and approaches. In those days, as mentioned above, Latin was learned by memorising lists and translating passages. Comenius disagreed with this completely, and created a sequence of books

ranging from picture text books of Latin words and phrases--translated into common Czech language to help students 'know' the words in the way Augustine described as 'sensible knowledge' instead of just through memorisation-- to structured Latin textbooks based on the real world (rather than being based on grammar; then the tradition) that was specifically designed to relate to a student's experience. This would have to some degree addressed the situation Augustine described (see above) of a student not being able to truly learn the term "saraballae" - a kind of head covering - until they had seen it for themselves.

Comenius also wrote books on teaching and learning both in schools and in the home, and made recommendations on methods of teaching that were based on how students learn. Perkinson describes him as saying that "learning... consists of knowing, doing, and saying" (1980, p. 64) and lamenting that "learning found in schools today is most inadequate. It is prolix, too difficult for students, frequently in error, of no practical use, and not conducive to piety" (1980, p. 66). In *The Great Didactic* (1693/1896), Comenius refers to the value of experience throughout, for example this aphorism: "Authority should not be allowed to prejudice the mind against the facts gleaned from experience; nor should custom or preconceived opinion prevail" (p. 137).<sup>45</sup>

Down through the years after Plato, philosophers continued their conversations and debates on the definitions of knowledge, wisdom and nature of reality. Two traditions of philosophy that grew out of these philosophical debates were rationalism and empiricism, with

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<sup>45</sup> "True, but there is prudence in respect for authority. Our ancestors may have shared a belief for thousands of years that may be wrong, but the persistence of that belief demands that we bring compelling evidence against it" (Dr. R. Bérard, comment, July 2016).



the rationalists initially supporting the view that all knowledge comes from reason, and empiricists claiming that knowledge comes from sense experience.<sup>46</sup>

As mentioned, *empiricism* represents the view that all knowledge comes from experience of the world. Bacon represents the scientific thrust of empiricism, but the school of thought is usually represented by such thinkers as John Locke and David Hume. In his *Essay Concerning Human Understanding*, Locke<sup>47</sup> (in an apparent reference to the *tabula rasa*) writes

Let us then suppose the mind to be, as we say, white paper, void of all characters, without any ideas; how comes it to be furnished? Whence comes it by that vast store which the busy and boundless fancy of man has painted on it, with an almost endless variety? Whence has it all the materials of reason and knowledge? To this I answer, in one word, from experience; in all that our knowledge is founded, and from that it ultimately derives itself. (1689/1824, book 2 chapter 1. para 2)

Locke lays out that there are two sources “from which experience furnisheth the understanding with ideas” (1689/1824, para 2-4): sensation and reflection. Locke frequently makes reference to experience (with the variation of meaning implied in the original Oxford definition above) as being variously intrinsic to learning, awareness and knowledge e.g., “But he that would not deceive himself, ought to build his hypothesis on matter of fact, and make it out by sensible experience, and not presume on matter of fact, because of his hypothesis” (1689/1824, ref 82 or ch 10) or “Can another man perceive that I am conscious of any thing, when I perceive it not myself? No man’s knowledge here can go beyond his experience.” (1689/1824, ref 89 or ch 19)

The *rational* philosophy was represented by such thinkers as Descartes, Spinoza and Leibniz. As in any school of thought, there is tremendous variation within it, but roughly

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<sup>46</sup> As this is a discussion on the relationship between experience and learning/knowledge, I will leave aside philosophical discussions relating to the question of whether anything can truly be known.

<sup>47</sup> This book is an e-version which is not broken up into pages. Instead, I have given reference, paragraph and/or chapter numbers.

speaking rationalists believe that all knowledge is not based on experience. They propose that some things can be known by: intuition, deduction, innately, or simply as part of our rational human nature. Descartes is very famous for his statement “Cogito, ego sum” (I think, therefore I am)<sup>48</sup> as a first step toward knowledge, indicating that the only foundation for confidence in any knowledge comes from thinking alone. He attained this conclusion through deduction-- the cornerstone for rationalist thought. Bacon, on the other hand, suggested that a particular type of induction<sup>49</sup> be used as the foundation for his approach to knowledge (Nov Org, 1620/1900, XIV).

As mentioned, *empiricists* and *rationalists* were not two clearly defined and opposing ‘sides’, but when Kant wrote *The Critique of Pure Reason* in the 18C, he was proposing consideration of a kind of synthesis of aspects of both of these philosophies. According to Kant, the title of his book is an exact description of the contents, in that it is “nothing less than the critical investigation of pure reason... a critical inquiry into the faculty of reason, with reference to the cognitions to which it strives to attain *without the aid of experience* [italics in text]” (1781/1952, p. 2).

Kant describes two types of knowledge: *a priori* and *a posteriori*, with the former referring to knowledge independent of experience (deductive, rational, intuitive, knowable by reason), and the latter referring to knowledge dependent on experience (inductive, empirical, based on observation and experiment, not knowable by reason alone). Kant points out that a clear line between the two types of knowledge is not easily drawn, --he begins “That all our knowledge begins with experience there can be no doubt” (1781/1952, p. 14 para. 1); he

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<sup>48</sup> See Reference under Descartes <http://www.britannica.com/biography/Rene-Descartes>

<sup>49</sup> As mentioned, Bacon was trying to create a new body of knowledge created on observation rather than history. Although induction and deduction are both involved in the scientific method, the Baconian method involved induction only.

continues “But, though all our knowledge begins with experience, it by no means follows that all arises out of experience” (ibid., para. 2). Indeed, how can one separate out one’s experiences from one’s thinking? Nonetheless, he goes on to explain the concepts through description and example.

Kant distinguishes them by saying that pure *a priori* “contains the idea of necessity in its very conception ... is not derived from any other proposition ... carries with it strict and absolute universality” (ibid., p. 14). On the other hand, with *a posteriori* “an empirical judgement never exhibits strict and absolute, but only assumed and comparative universality (by induction)” (ibid., p. 14). He then points out that, although *a posteriori* is empirical knowledge “only possible through experience... knowledge *a priori* is either pure or impure. Pure knowledge *a priori* is that with which no empirical element is mixed up” (ibid., p. 14).

A simple example of a statement representing the distinction between the two terms might be “all crows are birds” for impure *a priori*--a general deductive rule with the proof implicit in the definitions of the concept, but linked with experience; (Kant’s example was “all bodies are extended”, ibid., p. 17); and “all crows are black” for *a posteriori*--an inductive phrase that experience might indicate to you, and it is not a universal rule (Kant’s example was “all bodies are heavy”, ibid., p. 14).

Although ideas of “God, freedom (of will), and immortality” can be considered pure *a priori*, Kant proposes, at least initially, using mathematics for his discussion on reason. Math is an excellent pure example of *a priori*, as it is impossible to experience a perfect triangle, yet possible to formulate rules and calculations based on the angles. The puzzling fact that humans can do this was addressed by Plato in his description of inherent knowledge remembered through

teaching, while Descartes reached the conclusion that such thoughts are innate in each human mind<sup>50</sup>.

To continue to his point, having laid down a clear picture of both *a priori* and *a posteriori* Kant used a simple sum as an example of pure *a priori*: it is clear that one has no need of physically experiencing what  $12 + 15 = 27$  is in order to calculate the sum and get the correct answer; and each term is defined within itself--the definitions of the terms provide the proof. He pointed out that this statement was analytical in nature, i.e., “its denial would be a self-contradiction<sup>51</sup>” (Analytic, 2016). Kant also pointed out that synthesis, that is, statements for which the proof is not implicit in the concept, but through experience, is clearly an *a posteriori* activity as it involves the “truth or falsity of the statement determined by recourse to experience” (1781/1952, p. 17).

Having laid down these careful definitions and examples, Kant went on to point out that, although a statement like ‘ $12 + 15 = 27$ ’ is *a priori* and has an analytical element to it, it is also synthetic because, unlike in the example ‘all crows are birds’, 27 is not a part of the definition of 12 or 15. He claimed that this synthesis was an activity contributed by the thinker, thus creating a metaphysical continuum between *a priori* and *a posteriori*, rather than a clear delineation. This continuum was linked closely to *experience*, which is referred to regularly throughout the book.

Kant defined experience through reference to his understanding and exploration of knowledge - as a mixture of sensory input, cause for reflection, tool of memory and knowledge, and described it as being “itself a synthesis of intuitions” (1781/1952 p. 17).

That all our knowledge begins with experience there can be no doubt. For how is it possible that the faculty of cognition should be awakened into exercise otherwise than by means of objects which affect our senses, and partly of themselves produce

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<sup>50</sup> In references see Descartes.

<sup>51</sup> In references see ‘analytic’.

representations, partly rouse our powers of understanding into activity, to compare, to connect, or to separate these, and so to convert the raw material of our sensuous impressions into a knowledge of objects, which is called experience? (1781/1952, p. 14)

By looking back over the great philosophers and thinkers described above, one can see a kind of lineage down through the ages of discussions on knowledge, thinking and learning, that describe a kind of cycle between what might be called *the outside world* and what might be called *the inside world*, linked through some understanding and/or description of *experience*. The conversations and debates that had taken place over the years demonstrate that these ideas were never considered to be simplistic and clear cut, but Kant's discussions on the blurred lines between them illustrate that the discussions continued. Kant's proposals were focussed on the nature of knowledge and discussions of morality, and in the grand tradition of philosophical debate Kant's words did not end conversation on the subject.

Considering the fact that experience itself was at the center of *a priori* and *a posteriori* discussions, it is not surprising that *experience* continued to be part of the debate. As was true with terms and concepts described by Aristotle or Plato, however, although philosophical conversation regarding *a priori* and *a posteriori* and the definitions and classifications of related terms have continued, many of these terms have different connotations in the modern era, but they are used in modern writing nonetheless. For example, both the Ancient Greeks and Kant embedded and presumed religious, spiritual and/or metaphysical concepts in philosophical discussion in an entirely different way than takes place in philosophical discussions taking place today. This will become important when particular terms are shared between different schools of thought, as will be seen below. It is also interesting to note that, although these writers wrote extensively on such things as the links between concepts such as *a priori* and *a posteriori*, the perceived dualism between mind and body continues to be a strong notion in the modern world.

There were many--perhaps countless--great thinkers and writers that contributed to the development of ideas regarding knowledge, learning and experience over the years. Some few are mentioned above to give an overview of the nature of some discussions involving the role and definition of experience. Moving forward now to the 19<sup>th</sup> and 20<sup>th</sup> centuries, new terms were coined, dualisms expressed and argued, lines drawn, dramatic world events and cultural transformations took place, but all seeming to centre on the same core ideas leading us further to our current discussion. Philosophers, thinkers and writers such as John Dewey, Paulo Freire, Jean Piaget, Israel Scheffler, R. F. Dearden, Maria Montessori (to name but a few) can all be said to have contributed to the developments and debates of the time regarding the philosophy and psychology of learning and the nature of what experience is, and what the role of experience is related to education.

John Dewey is a good example as a next point of discussion for a number of reasons, including the fact that he seems to have articulated some of the underlying elements related to my own confusions and communication problems in attempted conversations regarding *experiential education*.

In Dewey's book *Democracy and Education* (1916/2009), he establishes right away that he considers *experience* to be at the heart of education, and defines *experience* through an analogy to the "highest terms" of *Life*.

"Life" covers customs, institutions, beliefs, victories and defeats, recreations and occupations. We employ the word "experience" in the same pregnant sense. And to it, as well as to life in the base physiological sense, the principle of continuity through renewal applies. (p. 6)

Dewey then lays out the foundations of basic education, starting with cultures that don't use formal educational structures for teaching, but pass on their wisdom through the activities of living; he calls this "indirect education" (ibid., p. 10). He also explains how all the "resources

and achievements” of a “complex society” would not be able to be passed on in such a system, but have to take place through a different educational approach he calls “formal education” (ibid., p. 10), which he does stress is essential and can be quite positive. Unfortunately, there are inherent dangers in the offering of this formal education, for, although indirect education is “at least personal and vital”, “formal instruction, on the contrary, easily becomes remote and dead--abstract and bookish” (ibid., p. 10). Dewey highlights the importance of both of these elements of learning, and also the great difficulty in finding a balance between the “the informal and the formal, the incidental and the intentional modes of education” (ibid., p. 11).

For Dewey this has to do with life as experience and experience as life. To bring it back to Bacon’s idea of learning through matter rather than words, Dewey identifies that it is not only important to learn through words and matter, but also through the social elements of life and indirect education. One can see Dewey’s concept of the intrinsic nature of experience in education through this “technical definition of education: It is that reconstruction and reorganisation of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience” (ibid., p. 62). Bearing in mind Dewey’s quote regarding understanding the word *experience* in its most pregnant sense (see previous page), and how “the principle of continuity through renewal applies” (ibid. p. 6), it is clear that education should be full of vitality and potential, and that the principle of continuity through renewal also applies.

It may seem initially that Dewey uses the word *experience* carelessly inasmuch as he uses it in different ways, but in fact Dewey explains the full notion of the word from different perspectives in various of his books. Remaining with *Democracy and Education* for a moment,

in a chapter entitled “Experience and Thinking”<sup>52</sup> he explains that *experience* has an active and a passive element--we do something, and that has an effect on us. This works in a kind of on-going cycle of action affected by thinking and reflection<sup>53</sup>. For Dewey, the “separation of the active doing phase from the passive undergoing phase destroys the vital meaning of an experience” (ibid., p.118) which can have a profound effect in schools that are attempting to use methods based on activities in their instruction.

He also explains at length that thinking and reflection are as much *experience*<sup>54</sup> (the passive stage) as sensory impressions of the material world are (the interaction with which is the active stage). For Dewey, experience is not an event, or a duality, but a cycle; a single continuous interaction of a great diversity of interactions.<sup>55</sup>

As mentioned, Dewey was a philosopher. Nonetheless, he also made indications for teaching based on his understanding of how we learn through experience. He first laid down a five step approach for “a method of an educative experience” (ibid., p. 128) based on the cycle of doing and reflecting<sup>56</sup>, before giving a wide variety of examples and reflections on how teaching would be approached in different subjects by using the method. Through these same examples, he also highlights how this method of educative experience introduces social and moral elements that stem from each learner’s individualised experiences (ibid., p.140).

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<sup>52</sup> Ibid. 109.

<sup>53</sup> Ibid. 113.

<sup>54</sup> Ibid. 120.

<sup>55</sup> “We experience many things, some of which we retain but may or may not understand. Learning really takes place when we reflect on and attempt to use those experiences to understand other things” (Dr. R. Bérard, comment, July 2016).

<sup>56</sup> “first that the pupil have genuine situation of experience – that there be continuous activity in which he is interested for its own sake; secondly, that a genuine problem develop within this situation as a stimulus to thought, third, that he possess the information and make the observations needed to deal with it; fourth, that suggested solutions occur to him which he shall be responsible for developing in an orderly way; fifth, that he have opportunity and occasion to test his ideas by application, to make their meaning clear and to discover for himself their validity” (ibid., p. 128).



Dewey continued to discuss and participate in the development of education and educational philosophy throughout his life, however, twenty-two years after Dewey wrote *Democracy and Education*, he wrote a short book called *Experience in Education* (1938/1997). This book was a short and succinct commentary on the current state of education, with very clear indications of how he felt his words were being twisted to support methods of education that he had not intended. It is of particular interest to this thesis, as it not only articulates the fact that this falsely created, dichotomous system was taking place 100 years ago, but also notes some of the effects that this has on the education system, and on the students/society taking part.

The book begins: “Mankind likes to think in terms of extreme opposites. It is given to formulating its beliefs in terms of *Either-Ors*, between which it recognizes no intermediate possibilities” (1938/1997, p. 17). This is such a familiar theme in the world today, and references to this kind of dichotomous tendency in human thinking are apparent throughout all of the works described above. As will be shown below, various writers and teachers took Dewey’s indications on an experiential method of education to an extreme, and responded through argument, or by putting into practice what they understood him to mean.<sup>57</sup>

Dewey explains that, regarding education, the tendency has been to either consider education as “development from within” or “formation from without”; of the revelation of “natural endowments” or the overcoming of “natural inclination” and replacing it with order. He describes two *either-or* approaches in schools of his day as being *traditional* and *progressive* education. *Traditional* schools of the day could be described, in generalities, as having certain common themes: curriculum, classroom expectations, and skills based on historic approaches that encourage students to be obedient, docile, and receptive to particular information, an

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<sup>57</sup> Unfortunately, although this book was a clear rebuttal, many people continue to regard him as father to an extreme version of what they call ‘progressive education/methods’ to this day.

agreement on the idea that knowledge comes from teachers and from established texts, that certain formalised structures and careful organisation should rule the classroom; and teachers should communicate knowledge and specific skills to the students while enforcing certain expected behaviours.<sup>58</sup> “The traditional scheme is, in essence, one of imposition from above and from outside. It imposes adult standards, subject-matter, and methods upon those who are only growing slowly toward maturity” (ibid., p. 18-19).

Within the first few pages of the same book, Dewey also discusses new education methods that he referred to as ‘progressive’. He describes progressive education as offering learning through experience; learner participation in subject development; development of individuality and the individual; development of skills as a means to an end, well understood and interesting to students; and developing an understanding of the ever-changing world; - all aspects he was well in favour of. However, he then goes on to point out that progressive schools were in fact developed in reaction to traditional schools rather than based on progressive methods of education, and so unfortunately seemed to have thrown away some very positive aspects of traditional education in the process. He described the reality of these schools as a kind of free-for-all, with no rules or direction from the teacher, leading to experiences that were not positive for the students or their learning--all because those involved did not have a proper understanding of what experience is. Clearly, these people used the word *experience* to mean *pathos* (i.e., anything that befalls you) rather than *empeiria* (i.e., involving memory when used in reference to learning, and amounting to more than mere repetition or habit), when in fact, Dewey defined the *experience* at the heart of education as something far deeper and with more variation than either *pathos* or *empeiria*:

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<sup>58</sup> Ibid, p. 17 - 18

The belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative...Any experience is mis-educative that has the effect of arresting or distorting the growth of further experience (1938/1997, p. 25).

Dewey goes on to describe and distinguish a wide variety of experiences that are not educative such as enjoyable experiences that stop further curiosity, experiences that are not connected well enough to form a process, or experiences without reflection.

What he was actually calling for was a philosophy of experience that would help us in our attempts to improve the education system.

...the fundamental issue is not of new versus old education nor of progressive against traditional education but a question of what anything whatever must be to be worthy of the name *education*. I am not, I hope and believe, in favor of any ends or any methods simply because the name progressive may be applied to them. The basic question concerns the nature of education with no qualifying adjectives prefixed. What we want and need is education pure and simple, and we shall make surer and faster progress when we devote ourselves to finding out just what education is and what traditions have to be satisfied in order that education may be a reality and not a name or a slogan. It is for this reason alone that I have emphasized the need for a sound philosophy of experience. (ibid., p. 90)

It is interesting to note that this did not take place to his satisfaction--or at least that is what one might presume based on in his 1949 book with Bentley *Knowing and the Known*, which contains various terminology regarding the nature of knowing, presented with definitions. They state "It will be noticed that the word 'experience' has not been used in the present text. No matter what efforts have heretofore been made to apply it definitely, it has been given conflicting renderings by readers who among them, one may almost say, have persisted in forcing vagueness upon it" (1949, p. 78).

Philosophers of education did not give up on the subject, of course, and many have further contributed to the on-going conversation on the concept of what might be called *experiential education* or a philosophy of experience, as well as our *either-or* dichotomous

tendencies, and the ever-evolving terminology that is related to such discussions. There are many wonderful examples of this, but a representative sample can be found in the book *The Concept of Education* (Peters, 1970), first published in 1967. It contains contributions from R.S. Peters, D.W. Hamlyn, P.H. Hirst, G. Vesey, R.F. Dearden, M. Black, G. Ryle, I. Scheffler, M. Oakeshott, J.P. White, J. Passmore, all of whom have made contributions to the on-going conversation.

In his chapter “What is an Educational Process”, Peters lays down foundations and concepts for what is meant by an ‘educated man’<sup>59</sup> and what relevant achievement and criteria<sup>60</sup> look like before describing the basic elements of becoming educated. He names them as: “training”, “instruction and learning by experience”, “teaching and the learning of principles”, “the transmission of critical thought”, and “conversation and ‘the whole man’” (Peters, 1970, p 14 – 22). He makes it clear throughout that the discussion on education has continued, making reference to elements of Dewey’s work (among others) that he agrees with, and those he does not. He specifically mentions the importance of the teacher in shaping the experiences of the students, how important yet how difficult it can be to ensure that all of the elements of education are addressed, and despairs (as did Dewey) that some people seem confused about the concept of discovery in learning.

Rather a lot of nonsense is talked in this context about children ‘discovering’ things which is rather reminiscent of Socrates’ demonstration in the *Meno* that even a slave can make a geometrical ‘discovery’ if he is given the chance. The point is that a child may find out what others know, but he does not if he is not asked the right sort of questions at the appropriate time, and if his experience is not guided in certain directions (ibid., p. 17).

Quite a detailed analyses of Dewey’s two aspects of teaching is made in Hirst’s chapter “Logical and Psychological Aspects of Teaching”. Hirst variously questions, agrees, or disagrees

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<sup>59</sup> Page 9.

<sup>60</sup> Page 6 – 14.

with various elements of the approaches to education described in Dewey's *Democracy and Education*, but does point out that some of his disagreements are actually in how "Dewey's disciples" (ibid., p. 56) have interpreted and applied his writing. Hirst indicates that Dewey is too prescriptive in his recommendation for the psychological approach - especially when considering a variety of subjects, and points out the irony in his opinion that "Dewey, in his desire that pupils should acquire a problem-solving outlook, was himself as guilty of pre-judging some of the very empirical questions of teaching method as the advocates of the logical method he so condemned" (ibid., p. 58).

Oakeshott, in his chapter "Learning and Teaching" (ibid., p.156 – 176), discusses the differences and relationships between a teacher and a pupil, and a learner -- as we are all learners. He takes up the conversation (described by Aristotle in relation to the development of morality through *phronesis*, Dewey related the importance of the social and moral learning that comes from what he called indirect and informal learning, etc.) about how the experiences stemming from social roles are important both in themselves and in the development of morality, and that this recognition should shape education. This links back to both Aristotle's discussions on the development of morality through *phronesis*, and Dewey's explorations on the importance of the social and moral learning coming from what he called indirect and informal learning.

In a chapter entitled "Indoctrination", both Dewey and Peters' frustrations are alluded to when J. P. White discusses the tendency for some people to confuse instruction with indoctrination which can come from "the controversy between 'child centred' and 'traditional' theories of education" (ibid., p178), a topic which was also referenced in one of Dearden's two chapters.

In the first of Dearden's chapters, "The Concept of Play", play was discussed as being an important part of education, which Dewey did talk about. It is in Dearden's second chapter, however, ("Instruction and Learning by Discovery") that learning by experience is discussed more deeply; he also touches on the role that experience plays for the teacher.

From the first page, Dearden draws a distinction between "the teacher as instructor and the teacher as facilitator", emphasises the importance of both, and addresses the biases Dewey named *either-or*. Regarding discovery methods Dearden points out "No sane person really supposes that children are going to rediscover the whole of what they need to know quite apart from the teacher's agency; if that were possible we should not need school at all" (ibid., p. 136). Regarding instruction methods he says "On hearing the word 'instruction', we may form a picture of a browbeating, hectoring, offensive teacher of a sort admittedly sufficiently common in the past to have formed a public stereotype, and in rejecting the *picture* we may think that we have validly rejected all instruction (ibid., p. 138)". For Dearden, what he describes as *discovery learning* requires a teacher to be both an instructor and a facilitator. Dearden describes

... a conception of teaching by discovery which draws in the active verbal participation of the teacher in framing problems, suggesting, discussing, or instructing what initially to do, but which leaves the result of the learner's activity open in some important respect, so that what is to be learned has indeed to be found out, and is not imparted (ibid., p. 154)

Dearden is clearly advocating for balance of method in teaching in much the same way Dewey does, even framing it as being mis-educative to think in extremes, although the extremes referred to are instruction and discovery.

Based on this description, learning in this way involved all three of Aristotle's approaches to (or kinds of) knowledge and action, with experience as the link to each cycle.




3 approaches to knowledge/ kinds of knowledge	Empeiria Interaction of knowledge, memory and action in perpetual cycle	3 kinds of action
<b>Phronesis</b> Practical wisdom; practical knowledge; applied knowledge; needed to be truly ethically and moral being; requires <i>empeiria</i>		<b>Praxis</b> Purposeful doing; doing with the goal of action (the action has an intrinsic purpose); practice with the goal of doing it right  Example: Politics
<b>Techne</b> Technical, productive knowledge applicable to a specific or general art or craft (aspects of which can also be included in episteme)		<b>Poiesis</b> Productive doing; doing with the goal of producing  Example: Making a pot
<b>Episteme</b> Scientific knowledge gained through learning, rhetoric, contemplation (can also include Techne)  Note: experiment was not a part of science at this time		<b>Theoria</b> Activity of the mind; thoughtful contemplation; goal of knowledge itself  Example: Mathematics

Table 3 Aristotle's terms, a review

In his book *The philosophy of primary education* (1968) Dearden indicates that the conversation regarding the role of experience in education has been a constant one since Dewey was writing. Dearden describes one of the main criticisms against elementary schools as being “that what children were expected to learn there had little or no connection with their actual experience.”<sup>61</sup> He listed various programmes and reports that had been introduced to try and combat “inert ideas” and “ideas with no interaction or continuity” at schools (p. 107) with

<sup>61</sup> In Chapter 6: *Learning and Experience* (p. 106-131).

resources such as books, films, visits and other “stimulating environments” in an effort to broaden the educative experiences of students, and asked whether they were working. In an effort to assess these approaches, Dearden broke down *concepts* into three types: perceptual concepts, practical concepts, and theoretical concepts; *experience* is considered to be a tool through which you can build knowledge in all of these areas (very like Dewey’s principle of continuity through renewal). He thus continues this ongoing conversation on what kinds of experiences are required to provide the underpinning to learn these different kinds of concepts, including language and context.

Dearden also echoes Dewey’s words regarding the tendency for *either-or* thinking in his introduction stating: “insofar as a positive and constructive view emerges from this critical scrutiny it will be seen to be neither a reactionary advocacy of authoritarianism, nor an enthusiastic centring of everything on ‘the child’. Rather, it will follow Dewey’s advice when he said that “those who are looking ahead to a new movement in education, adapted to the existing need for a new social order, should think in terms of Education itself rather than in terms of some ‘ism’ about education, even such an ‘ism’ as progressivism” (ibid., p. 11 and quoting Dewey).

Looking at this twentieth century collection of authors helps to illustrate that a lively conversation regarding education has continued, with frequent conversations on the role of experience at the heart. The discussions are directed toward education itself, which can be very culturally specific, therefore also social and political, rather than tangentially through larger conversations about knowledge, learning or morals. Perhaps this contributes to why these conversations are so subject to ‘isms’, ‘either-or’ thinking and politicisation (as will be further illustrated in the next sections, below).



Scheffler took up discussion of this very aspect of educational writing and thinking in his book *The Language of Education* (1979). In it, he describes the fashion for what he calls *educational slogans*, which are exciting and popular, compared to *definitions*, which clarify things and contribute to debate. The example he gives of slogans taking on a life of their own despite the author's best efforts was that of Dewey and slogans related to *progressive education*.

Although the details and substance of educational debate have changed in the last two millennia, over the last one hundred years or so it seems to have changed very little. In identifying problems with education, Dewey made comments very similar to some of those being made today; e.g., Dewey in *Democracy in Education* (1916: "Formal education easily becomes remote and dead, abstract and bookish" (p. 8) a "cramped study of the record of other men's learning" (p. 274). Compare this with Laura Piersol's words in her chapter in *Wonder-full Education* (2014) "By resolutely answering our students with "facts," we "transform the experience from wonder to quizzical bemusement or indifference ... Not surprisingly, learning has become boring for many students because we present the world as almost fully known" (p. 12).

By looking back through these considerations of such great thinkers, it becomes clear that the defining of experience and attempts to identify its relationship to education and learning has never been simple, but the fact that such thinkers have tried certainly underscores its importance. Socrates claimed to mistrust experience in the practical world, yet used the Socratic Method for learning, bringing people out of complacent contemplation and into active argument and dialogue. Plato claimed to place no trust in experience, yet required that his philosopher-king go through a fifty-year experiential education (i.e., requiring significant *empeiria*) process involving considerable development of skills and knowledge. Plato's student Aristotle believed in a

hierarchy of knowledge, yet recognised experience as being at the core of education and learning, and highlighted that a person with no experience was of no use.

Many conversation and debates on ideas related to education were not specifically about education itself. They were about concepts of knowledge and how we learn as humans. Writers such as Comenius, however, who gave specific indications regarding all aspects of education, demonstrated that consideration was being given to teaching and teaching methods hundreds of years ago.

More recent authors such as Dewey and Dearden discussed in depth the intrinsic importance of experience being at the heart of learning and education, while at the same time pointing out how educational terms and research can become meaningless slogans if we argue in passionate extremes instead of following the more central path which has been shown to be so effective.

The writing of these thinkers has contributed to our on-going conversation on learning, education, and the role of experience in education, but modern use and interpretation of their work can sometimes lead to further confusions as the next chapters will demonstrate.

## **4. Confusion**

### **Differences in Definition of Terms and their use in Publications**

In this chapter I will illustrate how lack of clarity in modern definitions of educational terms contributes to confusion, and makes it difficult for authors to quote each others work. It can also make it easy for researchers to manipulate quotes and citations into the appearance of support for given theories, regardless of the original author's intent. Resulting misconceptions can then be exacerbated when researchers continue to quote other peer-reviewed work,

dismissive of the fact that the work they are quoting has faulty foundations. In order to continue the conversation on how we can improve our education system or particular classrooms, we need to have terms with agreed-upon definitions so confusions can be avoided.

As I have mentioned, having discussions about *experiential education*, and the role of *experience* in education is a complicated process. Although the literature shows that these discussions have been going on for centuries, the discussions don't seem to have brought clarity--if anything they seem more complex and convoluted, which has become apparent to me through looking at recent research on the subject.

Some of the issues that I have come upon include discrepancies in definition of terms and/or lack of agreement in terms in educational writing. Terminology frequently varies depending on the perspective the writer is coming from, i.e., authors defining terms according to their opinion of them, rather than using agreed and well-conceptualised definitions to discuss the concepts. They also may present information in a way that makes it seem like it represents a whole truth that is supported by scholarly evidence, when this is not the case. In fact, some researchers and authors seemingly quote only research--or portions of research - that supports their theories even though they present their work as being an effort to reach a greater understanding of the truth. This makes it not only confusing, but very complicated when authors then quote each other - especially if the authors come from different schools of thought (e.g., classroom education and educational psychology) and therefore have different goals.

As seen above, experience has never been simple to define, but consider this definition found in the York University on-line *Dictionary of Philosophy and Psychology* (Baldwin, n.d.)

Experience (1) Psychological: consciousness considered as a process taking place in time. We can speak of an experience, meaning a specific phase or mode of conscious change, or of experience as a whole, meaning the events of the mental life in general.

The word is used so vaguely and ambiguously by writers on philosophy that definition is difficult. We find for instance such writers as Royce and Bradley speaking of an 'absolute experience' which is not subject to time conditions. This usage seems to deprive the term of all distinctive meaning.

A cursory search <sup>62</sup> reveals that 250 articles have been published discussing the meaning of experience in *The Philosophical Review* alone.

The term *experiential* education is not only defined differently depending on which reference is looked at, it is also considered by some to be synonymous with other terms that could be said to have equally amorphous definitions. A quick example can be seen in this title of an article by Kirschner et al. (2004): "Why Minimal Guidance During Instruction Does Not Work: An Analysis of the Failure of Constructivist, Discovery, Problem-Based, Experiential, and Inquiry-Based Teaching." (We will come back to this article below). As the title suggests, this article proposes that all of the headings in the title can be used interchangeably as, to the authors, they are synonymous.

The following are examples of terms that are regularly used--frequently interchangeably, although they can mean significantly different things-- to refer to different aspects of experiential education: experiential learning, place-based learning, service-learning, discovery learning; project-based learning, constructivist approaches, subject-related activity, practical learning, kinaesthetic learning, creative teaching, wilderness learning, adventure education, craft education, hands on learning, learning by doing, student centred learning, 'good teaching', life skills, applied learning, activity-based learning, problem based learning.

Most of these terms can be combined with the words 'education', 'approaches', 'learning,' or 'teaching'. This is also frequently done as if they are synonymous and interchangeable, i.e., *experiential teaching* being used interchangeably with *experiential*

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<sup>62</sup> i.e., on-line, and based on search terms rather than by perusing articles.

*learning*. Upon first consideration it may seem that this would not be possible as teaching and learning are such entirely different things, however, it is unfortunately not unusual. A quick example can be seen in the Kirshner et al. article in which they refer to "...studies conducted from 1950 to the late 1980s comparing pure *discovery learning, defined as unguided, problem-based instruction* [emphasis added] ..." (2004, p.79); in this sentence, learning is specifically defined as instruction. Although it is not possible to tell from the sentence who it is that created this definition, it clearly indicates that Kirshner et al. are comfortable to continue with this definition that makes an equivalence of learning and instruction. This is unfortunately typical, as mentioned above, and definitely helps to muddy the waters in discussions regarding education; it may also contribute directly to the misunderstandings surrounding *learning styles*, which will be discussed further below.

The terms that are used in a given article or book are usually, but not always, defined within that article or book, but these definitions can vary widely. The Association for Experiential Education (AEE), for example, describes experiential education as "Challenge and experience followed by reflections leading to learning and growth" and defines it as "a philosophy that informs many methodologies in *which educators purposefully engage with learners* [emphasis added] in direct experience and focused reflection in order to increase knowledge, develop skills, clarify values, and develop people's capacity to contribute to their communities" (AEE, no date). Meanwhile the Kirshner et al. article states that experiential learning is based on the hypothesis that "people learn best in an *unguided or minimally guided environment* [emphasis added], generally defined as one in which learners, rather than being presented with essential information, must discover or construct essential information for themselves" (2004, p. 75).

Although I had initially been unaware of this, for some scholars a program should not be called *experiential* or *constructionist* unless there is very minimal input, if any, from the teacher, and teacher involvement itself is seen as interference. Dearden and Dewey both explained that they were not recommending this as an approach--in fact both of them made it abundantly clear that what is required is a balance rather than an extreme. Kirshner et al. obviously believe that this is the widely accepted definition, however, and I did endeavour to discover the roots of this belief. To that end I looked up some of the references that they gave to back up their synonymous definitions of “discovery learning, problem-based learning, inquiry learning, experiential learning, and constructivist learning” as being required to be minimally or unguided approaches (Kirscher et al., p. 75). To be specific, I looked up the two articles they referenced for “discovery learning” (i.e., Anthony, 1973, and Bruner, 1961) and the two articles they referenced for “experiential learning” (i.e., Boud et al., 1985, and Kolb & Fry, 1975) to establish whether these papers contained any directions corresponding to the Kirschner et al. definitions.

Unfortunately, it is not possible to quote the absence of something, so it is not possible for me to demonstrate that there are no instructions regarding giving students no guidance within any of these papers. The only one that really came close to giving specific indications to instructors was Bruner, who made an “overly-simplified distinction” between two modes of teaching in an effort to “orient the discussion” (1961, p. 2): the “expository mode”, which is “principally determined by the teacher as expositor; the student is the listener”, and the “hypothetical mode” in which “the teacher and the student are in a more cooperative position with respect to what in linguistics would be called ‘speaker’s decisions’” (ibid., p. 2). There are no indications by Bruner for a teacher to not guide or to minimally guide the students, at least not

in this paper. It is interesting therefore that Kirshner et al. chose to use these articles as references for their definitions.

In Dewey's work he gave initial indications on what he considered to be progressive education, and spent some considerable time talking about how much more effective teaching could be if it were to be centred more around the needs and experiences of students in the class than only around a teaching agenda. Dewey gave quite direct instruction for teachers and how they need to be involved in schools, so he was not advocating for teachers to be uninvolved in lessons, but he was certainly suggesting an alternative to the closed system of education based on adult thinking that existed at the time.

Since that time, a wide variety of educational philosophers, psychologists and teachers have begun discussing more *student-centred* versus more *teacher-centred* style of education, leading the term 'student-centred' to become a much used and abused phrase--much in the same way that *experiential education* has.

In its attempt to define *student-centred learning*, the on-line *Glossary of Education Reform*, after explaining that *student-centred* is used in different ways depending on who is using it, states:

Because "student-centred learning" has broad implications, and the term may encompass a wide variety of potential instructional strategies and academic programs, it may be difficult to determine precisely what the term is referring to when it is used without qualification, specific examples, or additional explanation. In some cases, the term may have a very specific, technical meaning, but in others it may be vague, undecipherable jargon. (Student Centred Learning, 2014)

Due to the fact that a teacher necessarily plays a smaller role in a class in which the student interacts with elements, experiments, and various other resources in a class with a broader offering of educational experience, *experiential education* is frequently bound up with

notions of *student centred*-ness. In relation to *experiential education* and *student centred learning*, the only articles and books that I found recommending little to no teacher or professor input were referring to university level or other higher level learning. It is possible that some people genuinely do recommend the same approach for K-12, but it is also very likely that cloudy and unclear definitions could lead someone to thinking that such things are being recommended for schools by such authors as Dewey, without it being true.

In any case, as Estes put it in her 2004 article about *experiential education*, “Promoting Student-Centred Learning in Experiential Education”, “...teacher-centred facilitation is problematic in experiential education” (p. 141). By looking more closely at the Kirshner et al. (coming from educational psychology) and Estes (teaching approaches) articles, other examples of confusions in definition can be seen. Estes’ states that the purpose of her article is to “increase awareness of the inconsistencies between espoused values, and values in practice, effecting teacher and student power relationships during the facilitation of experiential programs” (p. 141). Her article makes reference to a considerable number of scholarly articles and books on experiential education (including references to the AEE website) as to how teacher involvement affects the degree to which an activity is truly experiential. She quotes the AEE site as saying that, ““throughout the experiential learning process, the *learner* [italics added by Estes] is actively engaged in ... being creative and constructing meaning”, then adds “however, in practice, experiential educators often assume authority for directing what students learn during facilitation (e.g., teacher led discussions) (p. 142).” After an extensive literature review that highlights and explains the difference between ‘student centred’ and ‘teacher centred’ education, Estes creates various lists and guidelines on how to increase and facilitate student centred experiential activities--which she is clearly in favour of.



In her glossary the author defines *student-centred* as being both “a learning process in which much of the power during the experience resides with the student”, and also one in which “students and teachers are collaborators, sharing equal power” (ibid., p.144). *Teacher-centred* is defined as being “a learning process where the power resides with the teacher” (ibid., p.145). Although it is clear that these terms are being defined specifically for her discussion, it does not seem scholarly to define terms in this way if the purpose is to facilitate understanding and “increase awareness of inconsistencies” as it not only creates a false dichotomy, but one that is not evenly weighted. She has set up two seemingly opposing terms with actual meaning in English, but has not defined them as such. She has also completely neglected coining a term for a learning process in which the power resides entirely with the student, thus making it confusing for a reader unfamiliar with the terms. On the surface it seems logical that if *teacher-centred* means the power lies entirely with the teacher, *student-centred* would mean the power lies entirely with the student (in unguided or self-directed learning); however, Estes has defined them in another way entirely--much more like Bruner indicated above (i.e., as a relationship that has cooperative elements).

This is particularly interesting when one tries to compare the Estes article to the Kirschner et al. article (2004) quoted earlier. In their article, Kirschner et al. also compare two approaches to teaching and learning. They, like Estes, set up the approaches in a dichotomy, explaining that “on the one side” (p. 75) are proponents of unguided or minimally guided approaches. These, they state, are variously called “discovery learning, problem-based learning, inquiry learning, experiential learning, and constructivist learning” (p. 75). They explain that proponents of these approaches believe that “people learn best in an unguided or minimally guided environment” (p. 75) which is defined as one in which “the learner must discover or

construct essential information for themselves” (p. 75). They contrast this with “the other side” (p. 75) i.e., “direct instructional guidance” which is defined as “providing information that fully explains the concepts and procedures that students are required to learn as well as learning strategy support that is compatible with human cognitive architecture” (p. 75).

Before discussing the Kirschner article further, I would like to highlight the difficulty in comparing the two articles through their definitions. Firstly, although Estes is describing experiential education, she does not create or define a term to mean ‘unguided’ or entirely student-centred in the way she defines teacher-centred as being entirely teacher centred. In her article the idea is not referred to or suggested. Secondly, Kirchner et al. utilise a similar either-or approach to terminology as Estes did, but with different reference points.

Table 4 – Estes and Kirschner: Student centred, Unguided

	<b>Student</b>	<b>Minimal guidance</b>	<b>Teacher/student balance</b>	<b>More guidance</b>	<b>Teacher</b>
<b>Estes</b>	Not mentioned	Student-centred	Student-centred	Not mentioned	Teacher-centred
<b>Kirschner</b>	Unguided	Unguided	Guided	Guided	Guided

One can see that, although it seems like *student centred* and *unguided* would be synonymous, as would *teacher centred* and *guided*, the terms are not transferable at all; neither paper uses a distinguishing term to represent a balance. In fact, it is easy to see that the terms are not only confusing, but significantly misleading if one of these authors were to quote the other.<sup>63</sup>

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<sup>63</sup> “I wonder if the term "teacher moderated" might gain any currency? Moderators do not merely "facilitate", they explain rules and procedures and see to it that they are followed. They challenge obvious error. They ask questions that need to be asked that don't get asked by their students” (Dr. R. Bérard, comment, July 2016).

This is particularly interesting as one of the pieces of criticism that Kirschner et al. direct at unguided instruction is that teachers attempting to use such approaches end up having to provide guidance to improve learning. One can see from the Estes article that she actually defines *student centred* as having guidance--just less than an entirely teacher-centred lesson. In fact, according to her definitions, she could have directed criticism at a *teacher-centred* lesson that provided any kind of open discussion, activity or experiment to improve learning, and used this as evidence that *teacher-centred* lessons are inadequate.

These differences in definition of terminology, stemming from different perspectives/schools of thought, help to illustrate how comparisons between the two articles would be entirely misleading. In fact, focussing further on the Kirschner et al. article demonstrates that this continues within the article itself. Throughout their piece, Kirschner et al. frequently refer to, and quote, work by Richard Mayer. They reference one article by Mayer in particular as proof to their conclusion that a guided approach is the only effective model for teaching and learning.

Mayer's article is called "Should There Be a 3 Strikes Rule for Pure Discovery Learning: The Case for Guided Methods of Instruction" (2004). Although the stated thesis is that "there is sufficient research evidence to make any reasonable person skeptical about the benefits of discovery learning", it does not come out with cut and dried proof against it. The article is actually one in which 'pure discovery learning' (defined as unguided) is compared to 'guided discovery', and Mayer states early in the paper that he is starting "with the premise that there is merit in the constructivist vision of learning as knowledge construction" (p. 14). This is already a different position from what one might expect from an article Kirschner et al. would use to back

their claim that constructivist approaches are a failure<sup>64</sup>. Mayer's stated goal is to establish whether there are links between teaching approaches and learning. He proceeds by using three pieces of research to work to his point. In the first--the one that Kirschner et al. quote from directly--the research compares two types of discovery learning; i.e., pure discovery (no guidance) and guided discovery (some guidance) with an entirely directed model (expository).

Table 5 – Kirschner et al. and Mayer: Pure Discovery, Unguided

	<b>Pure Discovery Method</b>	<b>Minimal Guidance</b>	<b>Guidance</b>	<b>More guidance</b>	<b>Entirely Teacher Led</b>
<b>Kirschner</b>	Unguided	Unguided	Guided	Guided	Guided
<b>Mayer</b>	Pure discovery	Guided Discovery	Guided Discovery	Guided Discovery	Expository

In each of the three cases described by Mayer, “the pure discovery group performed the worst and *the guided discovery group performed the best* [emphasis added] on tests of immediate retention, delayed retention, and transfer to solving new problems”<sup>65</sup> (p. 15). One can immediately see that this result would be problematic for Kirschner et al. to discuss, as their claim is that ‘discovery methods’ simply do not work. Due to the detail of their definitions, however, it is not obvious that the results do not match their claim because of how they use the terminology. The fact that they make no reference to the success of guided discovery in their paper calls into question the validity of the entire Kirchner et al. article, as they did not ensure that they had shared terms, or point out that they didn't, before quoting Mayer.

It is very interesting that Kirschner et al. use and quote research that clearly demonstrates that discovery methods can be highly effective in an article entitled “Why minimal guidance

<sup>64</sup> Bearing in mind the article title: “Why Minimal Guidance During Instruction Does Not Work: An Analysis Of The Failure Of Constructivist, Discovery, Problem-Based, Experiential, And Inquiry-Based Teaching”.

<sup>65</sup> These were the only assessment measures mentioned.

during instruction does not work: an analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching”. Kirschner et al. are only able to do this by initially defining *minimal guidance* as being equivalent to *no guidance* everywhere except in the title, and then going on to quote research that defines it differently than they have. The fact that they refer in the actual title to *discovery teaching* as being a failure, before going on to quote research that demonstrates that *discovery teaching* is highly effective, further exemplifies the mis-use of research findings. To further clarify this situation, here is the conclusion that Mayer drew from the research in question:

Students need enough freedom to become cognitively active in the process of sense making, and students need enough guidance so that their cognitive activity results in the construction of useful knowledge. Various forms of guided discovery seem to be best suited to meet these two criteria. (p. 16)

Kirschner et al. refer to many pieces of research, all of which they claim back up their conclusions. I have not checked every reference, although as mentioned I looked at the Mayer piece as it was referred to more than once. I also looked up one other example of a citation in Kirschner et al. called “The Equivalence of Learning Paths in Early Science Instruction: Effects of Direct Instruction and Discovery Learning”. Kirschner et al. state:

Klahr and Nigam (2004), in a very important study, not only tested whether science learners learned more via a discovery versus direct instruction route but also, once learning had occurred, whether the quality of learning differed. Specifically, they tested whether those who had learned through discovery were better able to transfer their learning to new contexts. The findings were unambiguous. Direct instruction involving considerable guidance, including examples, resulted in vastly more learning than discovery. Those relatively few students who learned via discovery showed no signs of superior quality of learning.” (p. 79)

When looking at the article in question, the description given by Kirschner et al. initially seems to be supported by the article. What is not pointed out by Kirschner et al., however, is that

in the Klahr et al. study, there were only two groups in the study: entirely guided and entirely unguided. The researchers experienced the same definitional problems that I experienced; i.e., “we faced a difficult definitional problem because nearly 100 years of research had yet to produce a consistent definition of discovery learning” (p. 662). They go on to say that they therefore “intentionally magnified the difference between the two instructional treatments in order to provide a strong test of the path independent transfer hypothesis” (p. 662). Already it becomes difficult to compare and quote as there are no shared terms.

Table 6 – Kirschner et al., Mayer and Klahr et al.: Discovery and Direct

	<b>Pure Discovery Method</b>	<b>Minimal Guidance Discovery Method</b>	<b>Balanced Discovery Method</b>	<b>More Guidance Discovery Method</b>	<b>Entirely Teacher Led</b>
<b>Kirschner et al.</b>	Unguided	Unguided	Guided	Guided	Guided
<b>Mayer</b>	Pure discovery	Guided Discovery	Guided Discovery	Guided Discovery	Expository
<b>Klahr et al.</b>	Discovery Learning				Direct Instruction

In the discussions at the end of the Klahr et al. article, it is clear that the guided students did do better than the unguided students in their goals. However, the wording “the findings were unambiguous”, by Kirschner et al. implies that there were no positive findings from the unguided students. In fact, according to Klahr et al., the “results also indicate that discovery learning does produce significant—albeit much smaller—gains: A nontrivial proportion (23%) of discovery-learning children became CVS masters. And even among the discovery-learning children receiving the lowest scores in the exploration phase, 15% became masters” (2004, p. 666). Bearing in mind that Klahr et al. are referring to entirely un-guided approaches; i.e., with no teacher input, these findings are significant, yet go entirely unmentioned by Kirchner et al.

Even the last sentence Kirschner et al. use to paraphrase the findings of Klahr et al. illustrates a subtle difference in emphasis in the text when the two are compared:

Kirschner et al.: “Those relatively few students who learned via discovery showed no signs of superior quality of learning.”

Klahr et al.: “The many children who learned about experimental design from direct instruction performed as well as those children who discovered the method on their own.”

The dangers of using *either-or* approaches can be seen through all of these articles, as they actually demonstrate that a varying approach somewhere between the two extremes proves to be most effective, yet the way they are worded make useful dialogue unlikely--especially in the case of Kirschner et al.<sup>66</sup>

Coming back to the Estes article with its pro student-centred slant, John Dewey is quoted and referenced in the article as laying the philosophical foundations for the ideas of both experiential education and student-centred learning. No reference is made, however, to how he spoke out against the progressives of his day that were taking his words to indicate that students should be allowed to lead their own learning without guidance or authority from teachers. Again, as the article claims to have been designed to increase awareness of inconsistencies regarding student-centred learning in experiential education, this potential misunderstanding would be important to point out--especially as the author is clearly in favour of the general approach. It is important, in this context in particular, that readers understand that neither Dewey nor the author are advocating for the creation of a new, equally unbalanced approach to education.

The examples given above help to illustrate some problems with definitions. Perhaps the fact that some authors define *experiential education* as being something that must be entirely *student-led* also helps to explain my difficulties in discussing the subject with teachers in NS;

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<sup>66</sup> “Good point; is it not possible that every person's learning occurs at different times and in response to different circumstances and individual characteristics?” (Dr. R. Bérard, comment, July 2016).

i.e., they may think that any teacher involvement on their part makes a learning activity non-experiential. Dewey mentioned how his original indications on ‘student centred learning’ had been misunderstood to mean ‘no teacher intervention’ by some, and that they needed to get past these extremes if they were to move forward with the development of education. Now, one hundred years later, we still slide into these either-or positions.

Another problem with terminology such as that mentioned above relates to the fact that reports and articles sometimes use the words ‘education’, ‘teaching’, and ‘learning’ interchangeably e.g., ‘experiential education’ and ‘experiential learning’ being used as synonyms. Considering the fact that *education* is an overarching term referring to teaching, learning, content and method, whereas *learning* is something personal to an individual, it seems counterintuitive to use these words as equivalents. In the example of experiential education versus experiential learning, this may help explain some of our confusion around what experiential education is, and to what degree the teacher should be involved.

The example given above was one in which Kirschner et al.<sup>67</sup> defined pure discovery learning as unguided, problem-based instruction. One possible reason for such a wide variety of terminology and meaning may stem from the wide variety of disciplines teachers, thinkers and writers are drawn from that use and continue to explore and consider “experiential education” as a teaching and/or learning tool. Mayer (2004) discusses this in his article, pointing out that these mistaken equivalents are common in various forms. The particular one he takes issue with, and addresses in his article, he calls “the *constructivist teaching fallacy*, because it equates active learning with active teaching”. His own thesis is that one result of this is that it seems to limit

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<sup>67</sup> i.e., “studies conducted from 1950 to the late 1980s comparing pure discovery learning, defined as unguided, problem-based instruction...” (p.79).



constructivist teaching approaches to using only pure discovery methods, whereas “a variety of teaching methods can lead to constructivist learning (p. 15).”<sup>68</sup>

This subject has been very much in the news here in Canada lately, due to the fact that our PISA math scores have dropped. There are quite a few radio shows, interviews, and newspaper articles about whether discovery learning methods should be used in the math classroom. On May 27, 2015 CBC ran an article entitled “Canada’s Math Teachers Should Get Back to Basics, Report Says” (Canadian Press). The article begins “A new report suggests that Canada’s math teachers need to shift their focus away from discovery-based learning and move back towards traditional methods”. The report in question was written by Anna Stokke for the C.D Howe Institute and entitled *What to Do About Canada’s Declining Math Scores* (2015).

The 20-page report was well laid out, and made some interesting points. Stokke’s main recommendations were that teachers use an “80/20 rule whereby at least 80 percent of instructional time is devoted to direct instructional techniques and 20 percent of instructional time (at most) favours discovery-based techniques (p. 8)”, and that elementary school teachers be required to complete a math course in their teacher training (p. 14). Interestingly, many of the quotes and references Stokke used to support direct instruction were from the Kirschner et al. (2006) and Mayer (2004) articles mentioned above; the Klahr et al. study is also cited.

In some ways the Stokke report exemplifies many of the confusions discussed above: she begins the report by setting up a dichotomy of direct versus discovery (p. 2), uses the terms instruction and learning interchangeably (e.g., p. 7), and makes an equivalence between a list of various types of learning and instruction including *experiential learning* (p. 4).

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<sup>68</sup> “In a sense, all methods, perhaps except those that entail pure indoctrination, lead to constructivist learning” (Dr. R. Bérard, comment, July 2016).

One interesting difference between Stokke and Kirschner et al. is that Stokke suggests that supporters of the two types of instruction “generally agree that there are merits to using a balance of both approaches but the specific balance is in dispute (p. 4)”. As mentioned, she goes on to describe her own recommended ratio between the two approaches (80/20). Stokke did not state references to support her claim that there is general agreement of merit on both sides, however, further investigation did reveal possible roots for her statement.

As mentioned, the major thrust of the report is in full support of direct instruction. In a section entitled “The Evidence on Direct Versus Discovery Based Instruction” (p. 6), Stokke sets up two references to illustrate that direct instruction is superior. Firstly, she refers to Kirschner et al. as saying that students can become “confused and frustrated” in “discovery-based learning environments”; she then states “Numerous studies have found that, in contrast, direct instruction techniques such as worked examples, scaffolding, explicit explanations and consistent feedback are extremely beneficial for learning”, referencing a 2011 report by Alfieri et al.

This refers to an article from the *Journal of Educational Psychology* entitled “Does Discovery-Based Instruction Enhance Learning?” This paper is a study by Alfieri et al. comparing two meta-analyses, one comparing unassisted discovery learning with explicit instruction, and the other examining “the effects of enhanced and/or assisted discovery versus other types of instruction (e.g., explicit, unassisted discovery)” (p. 1). They found that

Random effects analyses of 580 comparisons revealed that outcomes were favorable for explicit instruction when compared with unassisted discovery under most conditions...In contrast, analyses of 360 comparisons revealed that outcomes were favorable for enhanced discovery when compared with other forms of instruction. (p.1)

Due to limits of time and space, I will not go further into Alfieri et al.’s paper– I mention it to illustrate the selective nature of the reference. It is possible that she was making allowances for the fullness of Alfieri et al.’s research in her statement regarding the fact that there is general

agreement in benefits of both directed and discovery methods; but, despite the fact that Stokke quotes Alfieri et al. in her report section entitled “The Evidence on Direct Versus Discovery Based Instruction”, she makes no reference to the 360 reports supporting *enhanced discovery* even though these studies included direct instruction in their comparisons, and found that enhanced discovery methods were found to be favourable. My own position is that, in the interests of clarity, it is essential that the complete story is put forward for discussion— especially in reports such as this, which is intended to influence education policy.

The debate on approaches to math in Canada continues, and Stokke’s report is still drawing attention. On April 10, 2016, CBC ran an article called “Educators Debate Whether Some Math Basics are 'A Dead Issue in the Year 2016'” by Mark Gollum, in which Anna Stokke and her report are quoted extensively. This illustrates the kind of merry-go-round that can play out, sending incomplete or misinformation into the realms of the public—a seemingly peer-reviewed article misquotes reports and definitions, which are then quoted in a report by a policy advisor, who is then quoted by mainstream newspapers, planting that initial misinformation firmly in the mind of the public (including teachers, parents, school board members and other influential people, not to mention long-suffering students).

In researching articles and research that comment on *experience, experiential education* (and variations) and other related terms, it has become very apparent to me that they come from a wide variety of different schools of thought, with differing purposes, roots, and agendas. The article mentioned above by Estes, for example, comes from the *Journal of Experiential Education*, while the Kirschner et al. article can be found in the *American Psychologist*. Getting a picture of the wide varieties of perspectives addressed within them helps to explain some of the confusions in communicating on the subject I have experienced. Unfortunately, this can lead to

people within the various groups being unable to share or agree on research that could potentially help to clarify their own problems and questions.

In a very brief, incomplete, and anecdotal illustration<sup>69</sup>:

Table 7 – Types of articles and authors discussing *experiential education*

Type of article	Articles related to Outdoor Expedition
Directed to	Teachers, program leaders, adult learners
Goals	personal pleasure/development, group consciousness, team work without societal goals (e.g., management), personal pleasure/development, physical and mental transformation related to employment or rehabilitation, inner transformation (social behaviour); Outward Bound and Duke of Edinburgh award
Who they quote	Ancient Greeks, Kurt Hahn, Dewey,
Terminology <sup>70</sup>	Non-formal -, Experiential -, Place-based -, Project-based -, Global -, Environmental -, Student-centered -, Informal -, Active -, Cooperative -, Expeditionary -, Wilderness -, Adventure therapy, Adventure education,
Related journals	<i>International Review for Environmental Strategies; Journal of Experiential Education and associated website – the Association for Experiential Education (www.aee.org)</i>
Type of article	Articles and books with roots in psychology
Directed to	Educational psychologists, Teachers of adults, Teachers of children
Goals	focus on adult education; work-related/ management training; childhood learning, exploring how humans learn. Frequently using the term ‘ <u>creativity</u> ’ (sometimes using this as synonymous with ‘experiential’)
Who they quote	Piaget, Kolb, Torrance, Gardner, Lewin, Robinson
Terminology	Creativity, Creative thinking, Multiple Intelligences, Learning styles, Gifted, Constructivism, Cognitive development, Experiential Learning Differentiation Group dynamics, Gestalt, Co-operative learning, Experiential learning model; cognitive, affective, and metacognitive;
Related journals	<i>American Psychologist, Creativity Research Journal; The Journal of</i>

<sup>69</sup> No references or links are given for this table, so it should be considered anecdotal; I someday hope to create a more detailed table with references, links, and examples.

<sup>70</sup> Term followed by hyphen represents a term that can be seen immediately preceding teaching, learning, and/or education; e.g., student centred teaching, student centred learning, student centred education.

	<i>Secondary Gifted Education; Educational Psychologist</i>
Type of article	Articles regarding the application of skills for adults
Directed to	Directed to doctors, nurses, teachers, lawyers, colleges/work experience programs, apprentices, adult learners in other education programs or lifelong learning etc., or Teachers of people in these fields.
Goals/	Increasing learning for students/teachers in these fields Usually indicates little or no guidance from teacher
Who they quote	Ancient Greeks, Kolb, Gardner, Dewey.
Terminology	frequently use the terms ‘phronesis’ and ‘praxis’ (usually only these); service-learning; Learning Oriented Teaching (LOT), LOT model; cognitive, affective, and metacognitive; Bloom’s Taxonomy
Related journals	<i>Academic Medicine, Health Information and Libraries Journal</i> , many journals directed specifically to each profession that also address career related lifelong learning (e.g., all education related journals that contain practical advice for teachers)
Type of article	Education for children/youth
Directed to	Directed at teachers and/or written by teachers
Goals	Increasing learning for students with special needs; gifted students; at risk students; ESL students; ‘enrichment’ programs /subjects/activities; general population of students; young people in prison; learning life skills. Frequently contains classroom research and/or advice. Degree of advised teacher involvement varies widely.
Who they quote	Ancient Greeks, Dewey, Kolb, Robinson
Terminology	STEM, experiential-, place-based-, service-learning, discovery-, project-based-, subject-related activity-, practical-, kinaesthetic-, creative-, wilderness learning, adventure education, craft education, hands on learning, learning by doing, student centred learning, ‘good teaching’, life skills, applied learning, activity-based learning, problem based learning, Bloom’s Taxonomy
Related journals	<i>Educational Research Review; Journal of Education Policy; Journal of Experiential Education; Educational Technology &amp; Society; Critical Quarterly; International Journal of Early Years Education; International Journal of Science Education; The American Biology Teacher; Journal of Education Policy</i> and many more.
Type of article	Articles with roots in philosophy
Directed to	Philosophy of education students, Teachers of adults, Teachers of children, Teacher educators.

Goals	Exploration of underlying concepts related to teaching, learning, and education; practical advice for teachers and/or students; Social/societal change relating to education
Who they quote	Ancient Greeks, Hume, Ryle, Scheffler, Hirst, White, Freire, Greene, Dewey
Terminology	Empiricism, Skepticism, Naturalism, Experience, Knowledge, Oppositions e.g., Traditional v progressive and/or oppositional schools of thought e.g., rationalism v empiricism; Pragmatism; Experimental; Wide awake learning; Aesthetic education
Related journals	<i>Journal of Philosophy of Education</i> (there are also philosophy of education journals specific to various countries), <i>Educational Philosophy and Theory</i> , <i>Studies in Philosophy and Education</i> , <i>Educational Theory</i> , <i>Philosophical Inquiry in Education</i> , etc.

This is just a small illustration of some of the articles available that are exploring these ideas. As mentioned earlier, Kolb and Kolb have created a free library resource on their website of a four volume bibliography containing over 5,000 articles regarding experiential learning<sup>71</sup>. Although I have not gone through these in detail, I did look closely enough to determine that these were not all articles supporting Kolb's theories, and that most of them seem to be scholarly. I have also not traced back all of the examples given in the many meta-studies and meta-analyses that are available (some of which are further explored below).

There are also articles, journals (both online and otherwise) relating to specific 'alternative' schools of thought that may contribute to research/commentary on experiential education that may relate to or have specific terminology or contextual definitions that make them difficult for other people to consider; e.g., Montessori, Steiner and Buddhist schools that are embedded in wider philosophies. Papers and research related to suggested practice or indicators could potentially inform more 'mainstream' papers, but some of the related concepts are less widely accepted making them inaccessible (e.g., there are many articles, books, and

<sup>71</sup> <http://learningfromexperience.com/research/>

works published in Steiner's name that make reference to clairvoyance and what he called *spiritually based science*).

On a final note, I have not included any references or history related to methods of education--frequently called *experiential*--that relate to aboriginal or first nations approaches. I have deep respect for these methods, and many papers relating to the schools of thought I have referred to above do include discussions on them, but in these cases they are frequently referred to as 'traditional'. The term is set up in opposition to 'western' approaches rather than 'progressive' which further contributes to confusions, so I have purposely chosen not to include them in my own discussions.

As has been illustrated above, there can be discrepancies in definition of terms in writing in and about education. Terminology frequently varies depending on the perspective the writer is coming from, with some authors seeming to define terms according to their opinion of them, rather than using agreed and objective definitions to discuss the concepts. Authors may also present information in a way that makes it seem like it represents a whole truth supported by scholarly evidence, when this is not always the case. Some researchers and authors seemingly quote only research--or portions of research--that supports their own theories, even though they are presenting their work as being an effort to reach a greater understanding of the truth. This makes everything *experience-related* not only confusing, but very complicated when authors then quote each other. This can be exacerbated when the authors come from different schools of thought (e.g., classroom education and educational psychology) and therefore have different goals. To recap, the wide variety of *experience* related terms and their definitions in research and articles may play a central role in some of the difficulties I have experienced in discussing education. This illustrates how vitally important it is that researchers and teachers have, not only

a shared terminology, but shared definitions of that terminology, to ensure that meaningful dialogue can take place and we can continue to explore relevant concepts with shared understanding as a foundation.

## **5. More Confusion**

### **Misapplication / communication of research; a closer look at a few modern examples**

In this section I will begin by using statements from a 2015 article by Hondzel & Hansen to further discuss the problem of using terms that are not clearly defined or understood to illustrate other terms or concepts. I will then move on to discuss David Kolb and his work as the author of the unclear terms in question. Kolb is frequently quoted in research and articles related to education and educational psychology, particularly in reference to experiential education, and is quoted extensively in the Hondzel & Hansen piece. He is considered to be one of the creators of the concept of *learning styles*, which are an excellent example of Scheffler's educational slogans, and that definitely seem to have taken on a life of their own-- like Dewey's *progressive education*. To round the chapter off, I will give a few more examples of educational terms that have been misapplied to the frustration of their creators.

The following is from the abstract of a 2015 paper by Hondzel & Hansen in *Education Inquiry Journal* entitled "Associating Creativity, Context, and Experiential Learning":

One of the difficult aspects of defining creativity is that the term means many things to each of us, and reflects our unique perspectives and experiences. Our situatedness within a unique, personal context means that the concept of individual creativity defies formal scientific definition... We consider how individuals think about creativity, especially outside the confines of our institutionalised learning, and through the lens of experience. The context is a rising public and scholarly interest in the topic, but using



the complimentary frameworks of situated cognition and experiential learning.  
[abstract]<sup>72</sup>

Hondzel & Hansen describe the same definitional problem with the word *creativity* I have laid out above regarding the word *experience* and the term *student centred*; i.e., they are terms that are widely used by a variety of authors coming from a variety of perspectives, making definition quite difficult. Considering the significant problems I experienced finding agreed-upon definitions for the terms *experience* and *experiential education*, it is interesting to note that Hondzel & Hansen use both terms here to clarify the concept of *creativity*. Continuing with the abstract, the authors set up a particular scenario: one in which the *lens of experience* excludes *institutionalised learning*, not only indicating that learning in an institution is not experience, but also that there is a perspective outside of the *lens of experience*. This has the effect of introducing *either-or* thinking before the article begins.

The introduction of the article itself continues along these lines, establishing a dichotomy of “institutionalised learning” against “non-institutionalised learning” (also referred to as “traditional and non-traditional” in the article) to help Hondzel & Hansen in their quest to define creative learning and thinking. These notions are interesting to consider in the light of Kant’s discussions on *a priori* and *a posteriori* and whether anything exists outside of experience, and Dewey’s warnings against *either-or* approaches (especially when one discovers that Dewey’s work is central to Hondzel & Hansen’s thesis).

In the actual article, after a well-articulated discussion on a need for creativity in all of our social structures, Hondzel & Hansen explain how, in their efforts to develop understanding of the *how* and *why* of a creativity-based curriculum, they will “use a framework which draws

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<sup>72</sup> This is a long on-line publication with no page numbers, so paragraph numbers are listed for reference on the following pages; however, the paragraphs are not numbered on the article itself.

from two well-established theories, situated cognition and experiential learning” (para. 5).

Referring again to my own difficulties in establishing what is meant by *experiential learning*, reading it here described as a single well-established theory peaked my interest. (In the interests of time and space I will not comment further on Hondzel & Hansen’s description of *the theory of situated cognition*, except to mention that they draw the term ‘creativity’ from this description via Vygotsky, and that Dewey plays a major role in both theories).

Having framed *experiential learning* as a “well-established theory”, the article lays out the confusions I have experienced regarding complex definitions and seemingly contradictory points. However, it does not describe them as confusing or contradictory. I will use phrases from the two paragraphs summarising Hondzel & Hansen’s definition of experiential learning theory to illustrate this, each followed by a brief note (these phrases have been specifically selected to highlight my own confusion):

1. “Experiential learning theory states that knowledge is created through the transformation brought about by experience, and delineates a means by which learning through a process of situated cognition may take place. It can also be understood as learning that occurs when ...” (para 9)

This indicates that there is an accepted ‘experiential learning theory’, and places no criteria on the nature or quality of experience--again interesting when done in the context of Dewey references. Learning theory is also described as being the same as learning. No comments are made to indicate that there is any un-clarity around these statements.

2. “Experiential learning ... occurs... with or without the direct pedagogical instruction of an instructor...” (para 9)

As illustrated in chapter 4 above, many authors state that if learning occurs with direct pedagogical instruction, it is not considered experiential. No questions or comments on this are

mentioned. Although these are not extreme examples, one can see from these quotes that some of the confusions discussed in the chapters can be found in the article.

The first quote above, referring to *experiential learning* theory, cites two Kolb references and a further article that also cites Kolb. Further investigation reveals that the paragraph itself seems to be a paraphrasing of one of Kolb's papers (Kolb, 1984) in which he defines his own *experiential learning theory*. The original quote: "Experiential learning theory defines learning as the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience" (p. 41). The restructuring of the sentence does not seem to reflect the original quote exactly inasmuch as Kolb discusses how knowledge is created through the transformation of experience, whereas Hondzel and Hansen state that knowledge is created through the transformation brought about by experience. This distinction may be slight, but as they are using Kolb's work to create a definition for creativity it seems very important to ensure that the paraphrasing of the quote did not change the meaning--especially as they describe it as being well-established.

The contradictions and confusions apparent in this part of the article are perhaps understandable when Hondzel and Hansen explain that their two paragraph definition of *experiential learning theory* is based on the work of "Dewey, Lewin, Rogers, and Kolb, among others" (para.10). These four authors have all made significant contributions to discussions on the subject of education, and are frequently quoted in books and articles on educational psychology; summarising their various works and perspectives into a single two paragraph theory would be a difficult task for anyone. Nonetheless, it is misleading to refer to a well established theory, when it is in fact something the authors claim to have put together out of the work of four very different thinkers coming from different disciplines.

Within the article, Hondzel and Hansen go on to refer to “experiential learning processes and outcomes” as a “learning style” that is applicable in a wide variety of settings. The term *learning style* comes up regularly in books and articles relating to experiential learning, and experiential learning is frequently defined as a *learning style*. In an effort to further understand and illustrate the confusions in this section, I would like to focus on the work of Kolb, who is considered by many to be one of the foundational creators of the term. There are various reasons for looking at Kolb’s work, which will become apparent below, not least of which is the fact that the whole section on experiential learning from this article seems based on his work rather than their own (including the foundational descriptions of Dewey, Lewin and Rogers), and the fact that Hondzel and Hansen state that Kolb’s work is a well-established theory.

### **Kolb and Learning Styles**

The origin of the concept of learning styles has various possible roots. According to a 2009 meta-study “Learning Styles: Concepts and Evidence”, Pashler et al. looked at “several thousand articles and dozens of books”, and mention a study of “71 different schemes” (p. 106) which was not exhaustive. There are some models, however, that are more commonly quoted in books and articles, including David Kolb’s *learning styles*, Neil Fleming’s *VAK/VARK model*, and Howard Gardner’s *multiple intelligences*. According to another, more recent meta study by Joshua Cuevas (2015), Kolb’s description seems to be used more in research papers, and the VARK (Visual, Auditory, Read/Write, Kinaesthetic) model is more common in classroom application as it has basic terms that are easy to grasp.

On the surface, Gardner’s theory of multiple intelligences might seem unrelated to the concept of learning styles. Multiple intelligences are Gardner’s attempt at defining various types of intelligence, while Kolb’s learning styles are an attempt at defining ways students learn. In the

same way that the words *teaching*, *learning* and *education* are frequently used as though they are synonymous, however, so too are *learning styles* and *multiple intelligences*. From an article in the on-line *Teaching Expertise* magazine entitled “Learning Styles vs Multiple Intelligences” (2005), Barbara Prashnig writes “When talking with professional educators about new teaching methods I often hear comments like “In our school we have introduced Multiple Intelligences which now cater for our students’ learning styles...” (p. 8).

The number of approaches and conflation of terms further complicate discussions on the subject of *learning styles*; however, I will attempt to keep my focus on Kolb’s work as a lens for exploration of the term and of the effect this may be having on my attempts to discuss *experiential education*.

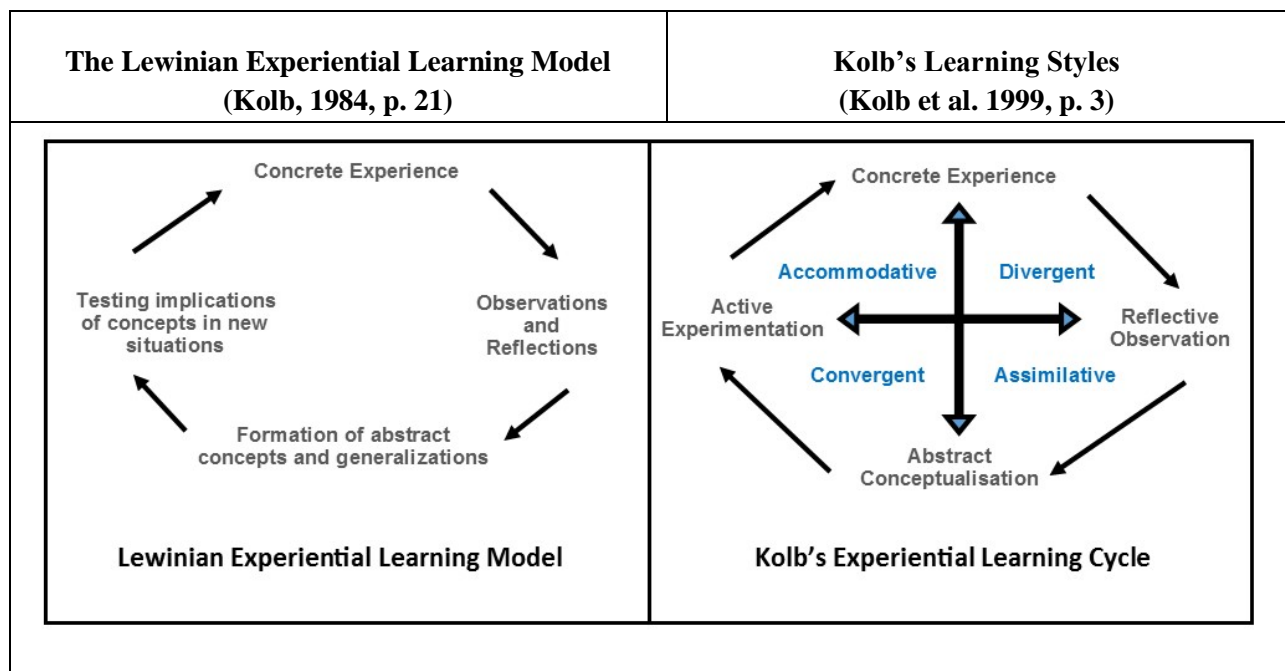
As laid out in chapter 3, questions addressing the role of experience in education go back to Ancient Greece and continue on through more recent thinkers such as Dewey. They differ in perspective, and their ideas are not easy to summarise, but they do seem to have some foundational commonalities: that we as individuals learn through particular experiences, through making sense of these experiences via application and reflection, and through building on memories relating to previous experiences. Many thinkers generally support the notion that knowledge and experience are built in a kind of perpetual cycle of learning, doing (or application) and reflecting, and that there are no clear lines between the *theoretical* and the *practical*, or between *a priori* and *a posteriori*.

Kolb (1984, p. 20) draws on such writers--specifically mentioning Dewey, Lewin, Piaget, Freire and Jung, among others, as laying down the conceptual framework for what he names the *experiential learning process*. He states that he used the word *experiential* in the naming for this process specifically so people would see that the roots of his ideas are seated in the work of these

authors (p. 20). In this paper, and in other papers (e.g., 1984, 1999), Kolb contrasts the *experiential learning* approach with cognitive learning theories and behavioural learning theories, however, he makes it clear that he does not consider his work to be proposing a third theory, rather that he is creating a “holistic integrative perspective on learning that combines experience, perception, cognition and behaviour<sup>73</sup>” (1984, p. 21).

Having created a definition of learning i.e., “Learning is the process whereby knowledge is created through the transformation of experience” (1984, p. 41), Kolb went on to develop his theories further.

Image 2 Reproductions of diagrams in Kolb’s essays



Kolb starts with what he describes as *the Lewinian Experiential Learning Model* and combines this with concepts he traces to Dewey and Piaget etc., to develop his ‘experiential learning theory’, ‘learning styles’ and a ‘learning style inventory’. The diagrams above are illustrations of the beginning of that development. It is important to note that these models relate

<sup>73</sup> Interestingly, this suggests that experience is not a part of perception, cognition or behaviour.

specifically to learning (i.e., as distinct from teaching). Based on the works of the authors listed, Kolb builds on the idea that “learning is a continuous process, grounded in experience” (p. 27). He then works through a careful thought process that leads to the initial stage of his learning styles proposal, starting with the idea that, as there are four stages in the learning cycle, there must be four related skills and abilities. He explains that, in the same way as the stages of the cycle are not in operation simultaneously, so these abilities can not be applied simultaneously; a learner must choose between them: “it is virtually impossible, for example, to simultaneously drive a car and analyze a driver’s manual about the car’s functioning” (Kolb et al., 1999, p. 3-4). Kolb explains that as each learner has their own history, their own strengths and weaknesses, so each learner will choose a different one of these abilities.

A Kolb learning style assessment is not quite as simple as that, however. In a learning style assessment, key words for each of the four stages of the learning cycle (feeling, watching, thinking, doing) are selected by the learner and then combined with two further analyses: the extent to which they emphasize abstractness over concreteness, and action over reflection. According to Kolb, combining these factors will identify a given individual’s learning style (1981, p. 4). In the right hand section of the diagram above, one can see that Kolb initially named four basic learning styles accommodative, divergent, convergent and assimilative.

Various other authors, including Kolb, have since built on his theories, and Kolb is regularly referenced in journals and books discussing experiential education as we saw in the example by Huntzel and Hansen. Many universities have departments and/or publications regarding experiential education that include sections on learning styles; according to the University of Waterloo website<sup>74</sup> it is “only one of many Canadian Universities that have developed their own strategies based on Kolb’s Experiential Learning Cycle and Learning

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<sup>74</sup> <https://uwaterloo.ca/centre-for-teaching-excellence/resources/integrative-learning/experiential-learning>

Styles”. By 1999 the initial four learning styles had been built up by Kolb et al. into a more complex picture that became “the Nine-Region Learning Style Type Grid” (Kolb and Kolb (2005), p. 198), with each area of the grid representing one of the stages of Kolb’s *experiential learning cycle* (i.e. Concrete Experience, Observation, Abstract Conceptualization and Experimentation).

David Kolb and his wife, Alice Kolb, are both professors of organizational behavior, and run a business called *Experience Based Learning Systems Inc.*<sup>75</sup>, a research and development company “devoted to advancement of the theory and practice of experiential learning” and selling various assessment packages and programs on how to address learning through these theories. This is just one business among many that sell such assessments, many of which have contributed to further variations on Kolb’s theme<sup>76</sup>.

One such business, *the Creative Learning Centre*, created by Barbara Prashnig in 1992, offers a trademarked ‘learning style analysis’, revealing “flexibilities, preferences and non-preferences in 49 different areas, which can significantly contribute to a student’s success or failure in learning” (creative learning centre, n.d.). Apart from the fact that there are now claims to 49 different areas in a ‘learning style analysis’, an important question should be asked, namely: how does analysing a learning style “significantly contribute to a student’s success or failure in learning”?

There are literally hundreds of articles and papers as well as sections in educational textbooks (including textbooks for teacher training) that explain what learning styles are and then make related indications for teachers. According to Lilienfield et al. (2010) “An August 2008

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<sup>75</sup> <http://learningfromexperience.com/>

<sup>76</sup> Current update on price for Kolb’s LSI: 2016 price for a pack of 10 as \$158 US for the “3.1 version”, however, it indicates you should phone directly for details on a price for the LSI 4.0 on-line version.



search of the ERIC database, which catalogues educational scholarship, revealed a whopping 1,984 journal articles, 919 conference presentations, and 701 books or book chapters on Learning Styles” (p. 39). Interestingly, in the Cuevas 2015 meta-study, he found that “the general teacher education texts almost universally portrayed learning styles in a positive light and advocated for learning styles-based instruction in the classroom...In contrast, the educational psychology texts tended to treat the subject with great skepticism and presented the topic as a sort of curious phenomenon” (p. 317). Apart from the obvious question of whether learning styles exist, the question of how the step from learning to teaching was, and is, made continues to be an interesting one.

In an article from 1981 that he wrote in response to initial detractors, Kolb explained that it is definitely helpful for learners to assess their learning style by using his Learning Style Inventory, or LSI, but that it should not be seen as anything more than “a person’s own self-description of how he or she learns” (p. 290). He states that “when it is used in the simple, straightforward, and open way intended, the LSI usually provides an interesting self-examination and discussion that recognizes the uniqueness, complexity and variability in individual approaches to learning” (p. 290–291). He goes on to elaborate that any assessment would not and should not be presumed to be fixed, and points out that there is research demonstrating that learning styles can change through uncontrollable environmental factors and experiences, and developed through intentional focus. In a later paper, Kolb also pointed out that, despite his warnings of the fact that learning styles should under no circumstances be seen as set, “nonetheless, in practice and research there is a marked tendency to treat learning styles as a fixed personality trait” (Kolb and Kolb, 2005, p.199). It is difficult to grasp that Kolb does not

see a connection between this tendency and the effects of his on-line business selling learning style inventories and assessments.

Upon further examination of Kolb's work, I saw that in some he asked the question whether teachers should adjust their methods in response to each student's learning styles assessment e.g., Kolb & Fry (1979) "...Thus we can begin to see certain matches between learner styles and instructional environment designs." In others he made open statements such as "In formal learning situations, people with the Diverging style prefer to work in groups, listening with an open mind and receiving personalized feedback" (Kolb et al., 1999, p. 5) or "People with this learning style have the ability to learn from primarily "hands-on" experience" (Kolb et al., 1999, p. 6), leaving the reader to perhaps presume that a teacher of such a student should therefore have the student work in groups and give personalized feedback. Certainly, there are numerous papers and articles quoting or referencing Kolb's theories that make specific recommendations to teachers to do so.

Some proponents of learning styles offer more direct indications in this regard. For example, according to the Prashnig website mentioned above<sup>77</sup>,

Everyone has a unique style in which they prefer to learn and if a student's learning preferences are being matched with the overall learning conditions and their study environment, they become their strengths. This will improve academic performance and lead to permanent learning success. (main page)<sup>78</sup>

This is a classic example of our tendency to conflate terms, in this case "learning style" with "teaching style". In this case, the presumption of truth behind the concept of learning styles, mixed with the conflation of "learning style" and "teaching style" has made its way into education textbooks, websites, government documents and policies. Nonetheless, it is difficult

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<sup>77</sup> <http://www.creativelearningcentre.com/>

<sup>78</sup> It should be noted that in the time between writing this essay and defending it, the Prashnig site has changed. The description of learning styles is now more extensive, and there is a new kind of assessment that you can purchase called "Teaching Styles", which has its own related pyramid (see image 4).

for me to comprehend that Kolb does not see a connection between this tendency and the wording embedded in his learning style descriptions, or to his on-line business, especially in the light of the fact that there are many other businesses out there selling Learning Style Assessments that specifically recommend that the teacher change their teaching to accommodate learning styles. I have certainly been unable to find any evidence of him making clear advisory statements to teachers telling them that they should *not* change their teaching style to address an individual's learning style, or that teachers should *not* be using his research to inform their teaching practice. Meanwhile, the fact that other proponents of the system are making clear recommendations for all teachers to do exactly that must contribute to the significant confusion here.

To be clear, there are a great many supporters and proponents of Kolb's work and of the various other learning style theories - the articles and University websites mentioned above are only a few examples. Many school and schoolboard websites refer to learning styles as established concepts. For example, the Vancouver school board website mentions "Also, just as they do when allocating students to non-combined classes, the Principal and Vice-Principal work together with the classroom teachers to best match the learning styles and needs of the student" (Vancouver School Board website, n.d.). The term has also made it into Education policy documents including here in Nova Scotia: according to the Nova Scotia Department of Education document *Inclusion (2012)*, *differentiated instruction* is identified as an "element of inclusion". From the same document: "Differentiated instruction addresses the needs of every student and accommodates the *learning styles* of all students" (p. 1).

There are also many detractors of the concept of learning styles, however, especially as time has passed and more research has been collected. Arguments against learning styles vary

(Pashler, 2009, Cuevas, 2015), but on the whole seem centred around three issues: whether learning styles exist in any objective way, whether identifying a learning style has any impact on learning, and whether identifying learning styles should have any impact on teaching. The first issue is obviously central, as the others would not be considered if it was agreed that there is no such thing as a personal learning style, but the third is of particular interest to my own investigation due to my experiences with some people (including teachers and fellow students) believing that *experiential education* refers to a style of education relating or directed only to a certain group of students within a class. It also highlights some of the other confusions that I have experienced, including the problems of some research articles quoting others without establishing their veracity, and also the conflation of terms.

Although most of the newer articles now talk about learning styles as being either controversial or disproven, and most of the articles and books in favour of learning styles had been written before 2005, I discovered recent articles on both sides. For example, Hatami (2013), Cheminais (2006) and Lu et al. (2007) support the idea of assessing students for learning styles and teaching in a way that is relative to the assessment, while Loo (2004), Landrum and McDuffy (2010), Pashler et al. (2009) and Cuevas (2015) are among those who do not (the latter two of these are meta-studies). It is important to note that these articles generally support the notion of differentiated instruction, they just do not support the idea that there is such a thing as *learning styles*, or that differentiation should be linked to an assessment of *learning styles*.

Further investigation revealed that, on the whole, newer articles that are in favour of learning styles have started to refer to them more as a way of getting to know one's self or one's students, rather than going on to advise teachers to teach according to assessed styles. The newer articles referenced on Kolb's site tend to be looking at whether people in particular areas of study

have *learning styles* in common (many of these are also linked to Kolb and/or are mentioned by him in his newer publications). The articles that discuss positive outcomes related to differentiated instruction are not referring to learning style assessments, instead, the term *differentiation* is used to refer to the use of a variety of approaches for all students within the classes, lessons or subjects; or is used to refer to splitting the class into groups according to capability.

The educational papers against *learning styles* generally looked to investigate their existence by looking at whether specific differentiated teaching designed to cater to a given student's (or group of students') learning style has a positive effect on their learning (i.e., by assessing learners according a Learning Styles Assessment, and then seeing if they increase their learning by using their assessed style than by any other style). Most of these articles state that there is no such thing as learning styles; and all of them state that there is no positive effect on learning that be demonstrated through addressing learning styles directly through learning method or instruction method<sup>79</sup>. Conclusions to these research papers contain such advice as

It is recommended that educators use a variety of learning methods<sup>80</sup> and encourage students to be receptive to different learning methods rather than try to link specific learning methods to specific learning styles (Loo, 2004, p. 107).

In fact, I have been unable to find any research demonstrating that there is a positive effect on learning resulting from teaching methods informed by assessed learning styles. Pashler's meta-review article regarding research up to 2009 demonstrated that there is "a lack of empirical evidence supporting the concept of learning styles-based instruction" (p. 117). Although it provided guidelines for the type of research design necessary to verify the learning

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<sup>79</sup> "To be clear, though, one does not disprove the existence of x by showing that using/thinking x failed to achieve expectations for the effects of x" (Dr. M. Forrest, comment, July 2016).

<sup>80</sup> Note the leap from educator to learner, i.e., "It is recommended that educators use a variety of learning methods...".

styles hypothesis, since that time, not only has this lack of empirical evidence continued, there is a growing body of research that indicates that this type of differentiated teaching may actually have a negative impact on learning (Cuevas, 2015, p. 312).

Kolb is still writing books and papers on the subject of learning styles, re-writing and releasing earlier papers and, as mentioned earlier, appears to have a thriving business selling products related to his theories; many believers in the learning style approach also continue to support him. According to Cuevas “a substantial divide continues to exist, with learning styles instruction enjoying broad acceptance in practice, but the majority of research evidence suggesting that it has no benefit to student learning...” (2015, p. 308).

Regarding the question of why some people associate experiential education with special needs students, as mentioned above, perhaps this can be explained by some of these same ideas: according to the VARK system “kinaesthetic” is one of the learning styles frequently referred to as being separate from ‘read/write’. According to Landrum and McDuffy (2010) “Regarding students with disabilities, matching instruction to individual students’ strengths and needs has been a hallmark--indeed a defining characteristic--of modern-day special education” (p. 7). In Kolb’s model, an *accommodator* is someone strong in ‘hands-on practical doing’ rather than strong in conceptualising and reflection, so perhaps some people consider students with special needs to be accommodators and therefore ought only to be offered ‘hands-on practical learning’. This is a rough equivalent to VARK kinaesthetic learning, which is frequently referred to as *experiential*, and is said to be more commonly used in the classroom (Cuevas, 2015, p. 322).

As we have seen above, various models supporting theories of learning have been developed over the years that seemed to have rational points to make, but were then taken to extremes (e.g., Dewey), conflated with other terminology (see lists above), or turned into sound

bites that take on a life of their own (à la Scheffler's educational slogans) causing a need for clarification and/or disclaimers. Another model that is of particular interest to this discussion is a further exploration of *experiential learning*--and was inspired by Dewey.

In his book *Experience and Education* (1938), Dewey mentions the need for a theory of experience (p. 25); he describes how all experiences are not genuinely or equally educative. In 1946 Edgar Dale published a book called *Audio-Visual Methods in Teaching*, in which he states that the book "is founded upon the principle that all teaching, from the first grade through the college level, can be greatly improved by visual and auditory materials<sup>81</sup> because these teaching materials can make the learning experience far more concrete and memorable" (p. 12). In the book he discusses the concepts of "good teaching" (p. 3), "effective learning" (p. 12), and the role of "rich experience" (p. 12) in both teaching and learning.

To help illustrate the "inter-relationships of the various types of audio-visual materials, as well as their individual positions in the learning process", Dale created a simple diagram of what he called the *Cone of Experience*. Initially, this was a simple 10-level progression from concrete to abstract experiences (see image below) illustrating how educative experiences do differ, and was accompanied by the warning "you will make a dangerous error if you regard these bands on the cone as rigid, inflexible divisions. For the different kind of sensory aids often interlap and sometimes blend into one another" (p. 37). He also warned against hierarchies and against an intended 'order' in the diagram. As he said later in the same book "In brief, we ought to use all the ways of experiencing that we can" (p. 48).

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<sup>81</sup> The items on Dale's Cone of Experience are all considered by him to be audio visual materials.

Image 3 The Cone of Experience

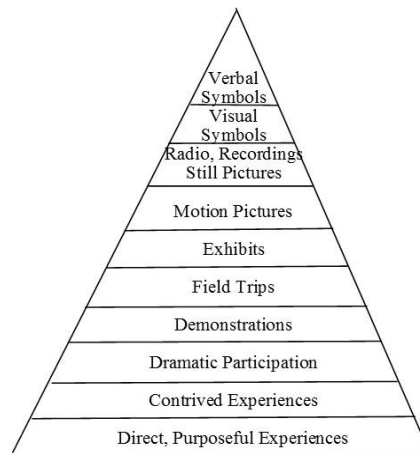


Image modelled after Dale's, p. 37

In spite of the many warnings he gave in both this book and a subsequent version, “by the time of the third edition...Dale found it necessary to devote six pages of the chapter on the Cone to “Some Possible Misconceptions” (Molenda, 2003, p. 3). Unfortunately, the misappropriation and misapplication of his words continued with various altered versions of his ‘Cone of Learning’ ultimately resulting in a variation with recommended time allocations, and a definite hierarchy of experience with “doing the real thing” at the top (see image below).



Image 4 Cone of Learning<sup>82</sup>

Cone of Learning		
After 2 weeks we tend to remember		Nature of Involvement
90% of what we say and do	Doing the Real Thing	Active
	Simulating the Real Experience	
	Doing a Dramatic Presentation	
70% of what we say	Giving a Talk	
	Participating in a Discussion	Passive
50% of what we hear and see	Seeing it Done on Location	
	Watching a Demonstration	
	Looking at an Exhibit Watching a Demonstration	
	Watching a Movie	
30% of what we see	Looking at Pictures	
20% of what we hear	Hearing Words	
10% of what we read	Reading	

Source: Cone of Learning adapted from Dale, (1969)

Various authors have investigated how this transformation took place, including Michael Molenda quoted above, but the misrepresentation continues to take place--for example, the version in this image came from a blog-article directed at human resource practitioners and corporate training.

In another example of the misappropriation/misapplication of simple educational concepts, in 2009, a UK government body called the *Qualifications and Curriculum Authority* came up with detailed guidelines for six ‘Personal Learning and Thinking Skills’ (PLTs) that were considered essential for all students to master. They named the skills as: teamwork, independent inquiry, self-management, reflective learning, effective participation and creative thinking. Students were told that the framework of these skills, plus math and literacy skills,

<sup>82</sup> Image downloaded from the Gabriel Lubale website, <http://gabriellubale.com/human-resource-practitioners-and-corporate-leaders-why-have-you-ignored-the-best-teacher/>. NTL Institute for Applied Behavioural Sciences, where the numbers originated, “believed it to be accurate but says that it can no longer trace the original research that supports the numbers” Magennis and Farrell (2005 p. 48).

were the skills they needed for ‘learning and life’. At the same time the term ‘Functional Skills’ was developed, which was used in reference to the math, literacy and IT skills needed to function at a given level: i.e., functional math. According to the Department of Education website “Functional skills should be integrated into the curriculum. To be effective, functional skills teaching must be relevant and allow learners to engage with real situations in the real world” (Dept. of Education UK, n.d.).

At the time that these concepts and phrases were being introduced in the UK education system, I was working at various schools in the North East in my capacity as Education Manager of an alternative college. Although PLTs were skills all students were meant to master, at many schools I witnessed students being told that they should do certain teamwork-related activities because they were good in teamwork skills; or that they were very good creative thinkers, so they should enter the art and poetry fair rather than considering the science fair. Classes were frequently split into groups based on assessments specific to one PLT, and teachers were told to teach them according to their assessment (i.e., the reflector group) rather than helping everyone build all of the PLT skills<sup>83</sup>.

Functional skills, which were meant to be embedded in all classes and assessed through application, began to be taught in discrete sessions, and were only assessed in written tests. In the original outlines, examples were given such as a student calculating the area of their actual classroom; in practice students were given the same written tests they had always been given. Interestingly, Functional skills, which started as term to be used for the application of math and literacy in all subjects up to an equivalent of PhD level, began to be used to refer to the math and literacy curriculum at elementary level or in ‘special needs’ departments and classrooms, so the

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<sup>83</sup> This seems almost exactly counter-productive. A comparative scenario might be one in which a doctor exclusively focuses on a patient’s stomach health because they don’t have any stomach problems.

term went out of use (clarification: they do not have inclusion of all levels of learning in single classrooms in the UK; students are streamed according to ability).

I mention this as it indicates some kind of commonality in tendency with terms and slogans in education: even when created/initially defined to identify aspects of a whole, they are used as extreme entities unto themselves. Also, as happened with ‘function skills’, education related to the application of theory or doing of things can tend to be seen in a derogatory light--or at least be used to refer to something distinct and separate from every learning process.

All that being said, it could be that part of the confusion that we have here in Nova Scotia regarding such things as learning styles is our inclusive education system; i.e., students of all capabilities being in the same class if they are in the same grade.

The roots of why these conflations and confusions have arisen is very interesting. As this is a thesis in education foundations and not educational psychology, it is not possible to go into detail on research on the subject here, but it is both fascinating and frustrating to consider. My own considerations include mere observations. As humans, we have a tendency to take things apart and look at them in isolation to study them. We develop language to discuss such matters, such as Aristotle so carefully did when he was considering knowledge. Nothing truly exists in isolation, however, only in context. Maybe part of the problem here is in conflating a simple model designed to enable study and discussion, with a very complex reality (i.e., we all have preferences to varying degrees, which vary according to situation. When articulated, the details sound familiar so it is easy to confuse these details with a wide generalisation).

This chapter began through a look at an article by Hontzel and Hansen, who based their piece about the importance of creativity in education on the concepts and definitions of David Kolb. Unfortunately, David Kolb’s work is not without controversy, especially regarding his use

of the term ‘learning styles’. By referring to *learning styles* and Kolb’s *experiential learning theory* as being “well-established”, the entire Hontzel and Hansen article could be called into question by those who know that they are not. Certainly, *learning styles*, the *cone of experience*, and *Personal Learning and Thinking Skills* are all examples of educational slogans that have been misused and misinterpreted, causing significant confusion among researchers and readers. These are the types of things that contribute both directly and indirectly to the confusions I have experienced in talking to various people about *experiential education*.

## **6. Conclusion**

I began this thesis by describing some of the confusion I experienced when trying to discuss what I considered to be *experiential education*, that is, education involving head (thinking), heart (feeling) and hand (doing) in balance. This very loose definition was not clarified through investigating modern research; in fact, my confusions were exacerbated. I found contradictions in definition and use of terminology, conflicting peer-reviewed research—sometimes seemingly designed to mis-lead the reader—and a tendency to describe education through a false dichotomy of extremes.

Looking back to Ancient Greece, and then moving forward through time, it became obvious that these issues had long been discussed--*experience* has always been considered to be a foundation to knowledge and understanding, and a building block for learning; and humans have always been attracted to discussing knowledge and education through two extremes--from theory and practice, to *a priori* and *a posteriori*, to traditional and progressive, and guided and unguided. In fact, these are just terms we use for the purposes of discussion and exploration.

Theory without practice is useless, practice without theory misguided; *a priori* and *a posteriori* are inextricably linked; and traditional/guided and progressive/un-guided are not even things that anyone is recommending--they are merely terms that are used to argue against extremes. It could be said that this is a wonderful illustration of Socrates' view that all we can really know is what we don't know, and that we can only define what something is not, rather than what something is. Without authors pointing out their approach however, i.e., that they are defining things by what they are not, it becomes a lost point.

Confusions in terminology, our tendency to an *either-or* approach and an increasing tendency to create *education slogans* have created a situation in which it is difficult to have discussions on education--much less for politicians, principals and teachers to make effective decisions on investment and approaches.

It has become clear to me that there is a great deal of research being done that initially seems to be in opposition with other research, while most of it actually supports the same underlying principles of a balanced approach; due to aforementioned problems with terminology and perspective, however, the points of similarity are lost.

The philosophers and thinkers discussed above could be said to have wildly differing views on many things, nonetheless, their considerations on experience and the role that experience plays in learning and building knowledge have helped us to understand it. Aristotle defined and discussed the differences between *empeiria* and *pathos*, highlighting the difference *empeiria* makes by comparing someone with only theoretical or practical knowledge with someone that also has *empeiria*. Augustine explained how we can only really know things that we have experienced, and created the term 'sensible knowledge' to represent this. Bacon's discussion of 'purposeful experience', and Locke's description of experience as being the

foundation for all reason and knowledge both contribute to Dewey's description of the varying levels of experience, and the role they play in learning through the principle of continuity.

These great thinkers have helped to underpin a vision of learning that most current writers also seem to share despite the *either-or* rhetoric, i.e., that learning takes place in a cycle involving reflection and the use or application of previous knowledge and experience; we have to have the opportunity to use our knowledge, and we also need a conceptual framework as scaffolding to build on our knowledge, i.e., learn.

Having established that educational experts see experience as being essential for learning, I can now look back at my initial attempts at conversations about education in Nova Scotia, and consider the following questions for further research<sup>84</sup>:

- What is the impact of the aforementioned confusions in research when decisions on school budgets are considered--especially in areas of low socio-economic development, where children and young people are offered less opportunity for educative experiences outside of their school life?
- Does modern use of educational terminology facilitate or hinder the discussion and development of classroom education?
- Is there a way for schools/society to redress the imbalance of experience in the lives of children from different backgrounds, and thus enhance learning?
- When Canada introduces new pedagogical methods in schools (e.g., the math approaches that instigated Stokke's policy paper and the CBC articles mentioned in chapter 4, above), what opportunities are provided to teachers to ensure they have experienced and fully understand the new methods?

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<sup>84</sup> Considerable improvements to this section were made through the helpful suggestions and feedback by Dr. M. Forrest.

- What pedagogical approaches create the most positive impact on students at high risk for dropping out of school? What is the impact of students' experience of these methods on criminality, recidivism and employment for 'at-risk' youth?
- Are our contemporary schools the best place for all students to access educational and formative experiences?
- To what degree is experience considered when designing approaches for reducing bullying and social problems in schools?
- When cost of education is considered, what classroom experiences do politicians take into account?
- What are the wider impacts and costs of NOT considering the role of experience in education? Does it have an impact on the cost of prisons, hospitals and social services? (What effect does it have on students to have home economics, industrial arts, music, art, drama and sports cut from their timetables? Does it have an impact on their math, English and science marks? Does it have a future impact on their lives?)
- Considering the speed of change in modern technology, what is the economic impact on Canada if there are limited interactive, experience-based STEM classes in schools?
- Finally, is it possible to bring forward the wisdom and experience built up by generations of philosophers and thinkers considering learning and knowledge, and apply it to modern education in such a way that we can objectively compare like for like, and assess the efficacy of approach?

Interestingly, this research process has led me from the place of thinking we are largely in agreement on how best to approach education; through a confusion of terminology, pre-

conceptions, and false dichotomies; back to a place of thinking that we are largely in agreement on how best to approach education. We have the foundation of thousands of years of human thought, and more than one hundred years of research on the subject of education and learning at our disposal. If we can steer clear of extreme *either-ors* and educational slogans, there is a lot of solid research on effective educational approaches being written by highly skilled and intelligent thinkers, teachers and writers. My hope is that we can get past fads and sloganeering, consolidate research from various schools of thought, and look closely at what we do know about education, so we can make solid, positive, and informed choices on how to continue to improve our education system.



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