

# Pedagogic Power-Tools: knowing what was and what is, for what will be

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The tools we choose to derive benefit from and our perception of their significance play a determining role in how successful the designs we create will be. When we think of a tool, the first thing that comes to mind is more than likely a device you hold in your hand. However, the designs we create are not only made with tools of a physical nature but are also birthed from tools of an abstract variety. Therefore not all tools are prosthetic. Some design tools are related to or exist in the form of words. These are verbal tools. In most educational environments the impact of verbal tools – like the knowledge learned from design’s history – on the design process is often underexposed. Yet, tools like design history can be exploited for, and can be perhaps even a key to, improving our student’s designs. Within contemporary pedagogical contexts, similarly to the way in which we maintain and promote the use of visual tools, there is a great need for our verbal tools to be equally supported and nourished.

*design pedagogy; verbal tools; design history; design practice*

## 1 Utilising Tools

*Between my finger and my thumb*

*The squat pen rests.*

*I’ll dig with it.<sup>205</sup>*

Across the reasonably pliant bracket of design as a whole, whether one wishes to be branded under the label of ‘designer’, ‘artist’ or ‘engineer’ – or perhaps all of these titles combined – we are all ‘makers’. What we make are objects and objects are created with tools. The objects I speak of are designs that you might sit on, drink from, or articles of clothing you might wear; devices you may cherish, throw away or never even give them a second glance; things you might read or fold; fancy items for special occasions or gadgets you use everyday; things made by machine, things made by

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<sup>205</sup> Stanza extracted from: Heaney, S. (1966) Digging, in *Death of a Naturalist*. London: Faber and Faber.



man and things never made at all; spaces you might encounter, inhabit or traverse through; we make objects to look at; we create ideas about things, and invent things about ideas (NCAD, 2018). When we design the tools we choose to use, exploit and our perception of their significance play a determining role in how successful the designs we create will be. Having said that, in order to construct the most successful objects, do we make full use of all the advantageous tools that are available to us, or only the ones we are most familiar with? When we think of a tool, the first thing that instinctively pops into our heads is likely a device you hold in your hand. Malcolm McCullough (1998) highlights that it is the hand-held type of tool that "comes to mind because more than any other it demands an especially active sort of skill" (p.59). However, if a tool is something that augments our abilities in order to conquer the impediments of the body, then tools are not just hand-held devices. For example, if tools can extend both our physical and cognitive capacities, a tool can be a piece of technology or even an applied intellect (McCullough, 1998). Therefore, the designs we create are not only made with tools of a physical nature but are also birthed from tools of an abstract variety. It is clear then that although tools are a pragmatic means to an end, they are not always prosthetic.

As it is the hand-held tool or 'hands-on' type of tool that predominantly enters our minds for immediate and efficient use, nowadays, the computer instantaneously seduces us to perceive it as the best option for expeditious designing. Admittedly, it is quite plain to see how the computer is recognised as the most paramount tool of our time; it is a multitasking solver of problems whose power lies in its ability for abstraction (Knörig, 2008). Yet, because of a computer's effectuality what is often consigned to oblivion is that a computer is just one tool that can be used to execute a design. Fred Brooks fundamentally admonishes that the computer is more of a toolsmith rather than a scientist (as cited in Knörig, 2008, p.17). In addition, John Maeda alternatively believes that the computer is "not a tool but a material" (as cited in Hara, 2009, p.125). Maeda warns us that when we use computers we should not credulously welcome whatever software is presented to us, and that we must vigilantly deliberate what kind of cultivated world can be grown from our knowledge of this material (Hara, 2009). That being said, as a result of a computer application's allure, when we design we are now nearly "optimally supported by computer tools" (Knörig, 2008, p.17). However, the computer being the overriding tool of choice and the predilection of immediate computer use remains well defended. This is chiefly due to the current and perpetual perception of the computer as being the almighty 'meta-tool' for design practice (Gänshirt, 2007).

The designer's adoption of the computer has had a significant impact on aesthetic ideas. Since the very establishment of the view of machines as tools for mass production, designers and artists have embraced how such scientific powers can influence their lives (Bayer, 2009). More specifically, this welcome has allowed machines to improve certain aspects of a designer's creative activities. Still, the excellence of computer applications can cause us to turn a blind eye to a key element of our artistry – the human body (Knörig, 2008). Without doubt the human body is an unrivalled 'tool-being' (Molotch, 2018). Yet, in relation to the result or success of a design, some bodily tools like our eyes or our appendages are often misprized. Nevertheless, the tools I mention here are somatic ones. There is a further failure to fully appreciate the pertinence of our minds and the knowledge stored within them. Andy Gossett reminds us that the brain is "the best design software"; the tool "between your ears, so keep it upgraded by looking, reading, and questioning" (as cited in Cleaver, 2014, p.74). Hence, the mind remains the most matchless engine for forging ideas. Despite this the popular under-acknowledgement or even incognizance of such an ingenious design tool is without doubt, due to the fact that the desktop computer has a particular proclivity for absorbing our complete attention (Knörig, 2008). Therefore, the computer's prominence as being the best recourse for immediate use and the current engrossment of its applications can often be to our creativity's detriment.

Before we begin to use a tool we ask ourselves what it is that this specific instrument can do for us, or which type of tools should I call on to get to grips with the project in hand? This is because each tool serves a specialization and when we address problems the tools we choose to help us tackle a

brief depend on the tool's specific purpose (McCullough, 1998). Clifford Geertz (1973) importantly accentuates that a tool's disguised imperfections are only revealed when it is put to use. Therefore, it would be quite folly to even attempt to use a computer for procuring ideas or visuals prior to securing a solid concept. Admittedly, the computer is an outstanding tool available to designers, but be warned, this technology will not give you an idea (Cleaver, 2014). Being creative requires ideas and students must be exhaustively aware that ideas do not live in computers (Altsteil & Grow, 2017). Tom Altsteil and Jean Grow (2017) stress that design begins "in your head, flows onto paper or napkins or backs of folders or inside book covers via your pencil" (p.144). The pen – or any instrument that we use to make marks – holds as the most substantial conceptual tool for designers (Knörig, 2008). It is a vital and extremely precise implement because through its use "the crucial first step in the journey from imagination to reality" takes place (Graham-Dixon, 2005). The pen grants us utter freedom, a freedom that is evident as early in the mark-makings of infants who clearly understand how to utilize this tool in order to communicate their ideas (Knörig, 2008). Even now computational support for sketching is doing its best to exactly mimic practices that are supported by physical tools (Johnson, Gross, Hong & Yi-Luen Do, 2008). Evidently, there is a popular reliance on computer-based tools but not necessarily at the expense of the pen. However, the majority of current hardware still "lacks the portability, responsiveness, and feel of tools of traditional design practice" (Johnson et al., 2008, p.22). Nonetheless, when executing our initial concepts – regardless of whether we use a computer mouse or a stick of charcoal to do so – the pen is ideal for the inceptive stages of design when ideas are speedy and copious. This is due to the fact that this particular tool enables us to swiftly communicate a few ideas, and quickly alter, reject or refine them (Knörig, 2008). When we generate and convey ideas, the use of the pen can be exploited for both visual and verbal purposes. For instance, when we sketch we use the pen as a visual tool, but in contrast if we use it to write down words, sentences, descriptions, critiques, discussions and theories, it becomes a verbal instrument.

Christian Gänshirt (2007) shows us how design tools can be split into these two classifications that complement one another. These are visual tools that create images and forms which emanate from the use of our hands, and also verbal tools from the written and spoken word. While visual tools make it feasible to convey concepts in visual form, the verbal tools we avail of produce textual information and are used to explain, examine and criticise design (Gänshirt, 2007). Hence, the verbal tools we use are principally put to use for developing the meaning of a design. Similar to the way in which Christian Gänshirt has coined the computer as a meta-tool for design practice, Peter Dalsgaard (2014) calls attention to John Dewey's description of how language is a meta-tool: "a tool of tools in the sense that it is the primary instrument for establishing meaning" (p.148). Having said that, it must be noted that language is not always "concerned with correct representation" (Dalsgaard, 2014, p.148). The extent of its truth lies with those who have written it. For that reason, Ludwig Wittgenstein is one philosopher who strongly felt that there is no equal status regarding verbal and visual tools. His writings forewarn that: "there are things that cannot be clearly expressed in language, but can be shown" (as cited in Korst, 2012, p.80). However, with that said language still remains essential "in managing and controlling the conditions" of a "situation and steering it towards transformation" (Dalsgaard, 2014, p.148).

In contemporary pedagogy, the impact of verbal tools on the design process – and the way in which they are viewed – is often underexposed (Korst, 2012). For instance, design theory is an example of one verbal tool that is taught within design schools which is all about the question of 'Why', yet as designers-in-training the current academic procedures put in place are primarily fixed on the practical question of 'How' (Lupton, 2009). That is to say that during the process of becoming a designer we overcome challenges such as how to use tools like the newest computational software, how to operate an adequate camera, how to arrange files and information appropriately, how to develop a client-list and how to competently collaborate with other professional establishments (Lupton, 2009). As a result, within the vehicle of design teaching, verbal tools seem to have taken a back seat. At present, the predominant tools being used or at least the type of tools that are being

given most attention are visual ones. With the prevalent favouritism towards the use of visual tools and the somewhat neglect of the use of verbal tools, all the potential complications of modern design briefs are not being dealt with (Korst, 2012). However, in this paper it is not my intention to place verbal and visual tools at the same level but to establish the effects of underlying pedagogic technologies. I do not deny the brilliance of visual tools, and by no means do I resent their use, but what does not seem to be highlighted enough is that – to the benefit of the designer – the splitting of design tools into the verbal and the visual corresponds with two complementary methods of thinking: “verbal, linear, logical thinking on the one hand and visual-spatial, concrete, simultaneous, associative thinking on the other” (Gänshirt, 2007, p.101). It is apparent then that visual tools go ever so well with verbal tools, for the greater good. Therefore, verbal tools are unequivocally true pedagogical power-tools; they are imperative instruments used to inform and communicate arguments about the qualities of design (Korst, 2012). Within today’s educational environments, design students must be impartially exposed to all of the beneficial tools available to them; they must fully comprehend how each tool functions, how they are looked after, and most importantly, how one tool operates with another.

## 2 Exploiting Tools

The most prominent verbal tools used in contemporary design pedagogy are most visible in the activities undertaken in a student’s critical and contextual studies. Namely, when learning about the history, theory and visual culture of design. As a reference for understanding design, design history is one verbal tool that is easily at one’s disposal. It is what students absorb here that enables them to derive full benefit from the subject. In that, the knowledge learned can be used as a tool to give rise to new ideas that are built on foundations from the past. Over the course of history separate periods of past design have been typically differentiated by the defining attributes that they share, which set them apart from other epochs (Tonner, 2015). The characteristics that define these eras are observed through the designed objects that the particular period produced. More broadly, for that reason, we can distinguish the “ancient era from the medieval, the medieval from the modern and so on” (Tonner, 2015, p.133). What design historians do is situate design-related events in time, they impart us with an explanation as to why particular events occurred when they did and what objects were produced during that point in history. Essentially their current objective is to “establish links between the present and the past and contribute to an understanding of design as it is currently practised” (Triggs, 2011, p.4). Historically, the subject concentrates on the interrelated conditions in which these objects existed, and stylistically it examines the designed object’s distinctive appearance; an appearance that is, in most cases, determined by the principles according to which the object was contrived.

Over the last two or three decades one of the most preponderant propensities within design has been the impact of historicizing it (Jensen & Nygaard Folkmann, 2013). What design historians have done to objects is attributed meaning to them by maintaining that they “have a relation to or are embedded in a historical context of tradition” (Jensen & Nygaard Folkmann, 2013, p.2). When called upon, design history is an instrument that can be used to defamiliarise the present (Wyche, Sengers & Grinter, 2006). In that, it supports designers in envisioning design for the future without the constraints of “present-day cultural assumptions” (Wyche et al., 2006, p.36). We can look back at history, unrestricted, and see what historic designs like the invention of the wheel, canned food or Johannes Gutenberg’s early printing press has done to make life easier for us all. Furthermore, we can exploit design history as a tool in order to convey or include an analysis of the merits and faults of these objects that were once created. These merits involve the quality of the object being worthy of appreciation or praise, and on the other hand, the faults I enounce are the inadequate facets and unsatisfactory characteristics of the design in question. In order for the design to be fully understood, and the knowledge from its conception taken in, we scrutinize these merits and faults within the conditions surrounding the epoch in which the object was formed.

Within the scope of design history, every epoch has formed a unique will of the age which has resulted in the creation of specific and identifiable styles of design. Moisei Ginzburg (1982) tells us that each era, or in his words each “vital creative force”, is distinguished by specific artistic organisms (p.78). As a result the styles that represent these periods of time have now become “consecutive steps of a consistent historical progression” (Kavas, 2015, p.161). Design history then is usually documented in terms of mirroring a particular zeitgeist (Calvelli, 2010). Furthermore, epochal narratives are those that strive to sum up these zeitgeists “in some kind of overarching societal designation” (Osborne, 1998, p. 17). It is evident then that the circumstances surrounding the advent of a design or “a particular kind of designing involve complex social relations” (Dilnot, 1989, p.227). Therefore, designers-in-training and creatives alike must become conscious of the fact that all objects are part of a more extensive world, which means that they are “never free from context” (Östman, 2005, p.287) For that reason, design cannot be completely understood without taking its social dimension into account (Margolin, 2009). That is to say, the discipline of design and the field of sociology are an example of entities that are far too important to study in isolation. This is because “design is not produced in a vacuum, and its history must acknowledge influences from outside events, discoveries, and policies” (Heller, 2014). Philip Tonner (2015) also stresses that each epoch is now a “historically defined configuration of meaning”, which the historian – or designer in this case – can use as a tool to extract useful information and “characterise and criticise individuals, societies and civilizations” (p.133). Peggy Loar (as cited in King & Sisson, 2011) explains how these civilizations define themselves through their everyday things, specifically via their material culture. Loar informs us that through designed objects “cultures are recorded, providing us with tangible evidence concerning transformations in values and politics” (King & Sisson, 2011, p.1). Therefore, a designer’s contemporary practice can considerably profit from knowledge of things, past and present. Using this knowledge can even “function as a lens, allowing observers to better see some of the most prominent paradoxes of modern society and culture” (Fallan, 2010, p.viii). Albert Camus tells us that: “without culture and the relative freedom it implies, society, even when perfect, is but a jungle. This is why any authentic creation is a gift to the future” (as cited in Vinod & Deshpande, 2013, p.358). Therefore, we must be aware that knowledge of the objects we create today for tomorrow may well be called upon by designers in the future and examined thoroughly. Today’s latest invention may well be tomorrow’s relic. If there were stronger procedures in place to inform and make young creatives fully aware of this, perhaps this particular detail could encourage them to take advantage of all tools, and as a result, produce designs that are more desirable, satisfactory and effective. Although we cannot escape the fact that the needs of the future will not be the same as they were in days gone by, we can exploit design, including its recorded history, to promptly explore ideas, to discover things and most importantly to question them (Hustwit, 2009). The use of design history as a tool allows us to assess an object’s ‘situation’ and turn this to one’s advantage. Designs of the past – those that have worked and those that have not – and the consequences of their efficacy or inefficacy need to be ventilated and learned. In his celebrated statement, George Santayana (2009) declares that: “those who cannot remember the past are condemned to repeat it” (p.312). Recognising which designs have been successful and which have been unsuccessful can allow us to circumvent the errors and flaws of the past. For instance, if we look to what was done before and initially withhold judgment, this suppression may also “be used as a tool to make later judgment more sensitive” and this of course “is a way of learning from everything” (Venturi, Scott Brown & Izenour, 2009, p.71). Le Corbusier, one of the pioneers of what is now called modern architecture, once stated that:

*To be modern is not a fashion, it is a state. It is necessary to understand history, and he who understands history knows how to find continuity between that which was, that which is, and that which will be. (as cited in Rand, 2009, p.68)*

Evidently, one who truly understands a historical object recognises and understands the reasons for the decisions involved in its making. Due to the documentation of this decision-making a window of opportunity for learning has been made readily available to us. Such information has been made

obtainable because during the design process decisions are made at certain stages about every 'thing' (Hustwit, 2009). The more knowledge we have about these resolutions, the better the selection of information we possess which is freely available to pick and choose from when it is relevant to what it is we are designing. For that reason, it is paramount to acknowledge what history can contribute to the solving of contemporary design problems and how the knowledge gathered from it can be taken full advantage of (Jensen & Nygaard Folkmann, 2013).

Although knowledge is a powerful tool, it must be highlighted that history is not incontrovertible but a means of "continuously changing interpretations, largely dependent on cultural and political interests" (Östman, 2005, p.360). Therefore, given that design comprises of the tools through which designers represent and communicate their concepts and ideas, to some extent, designs are repeatedly the consequence of bias decisions (Korst, 2012). As a result, subjectivity is inseparably part of them. Furthermore, the history of design is not simply a history of designed objects, it is a history of the transforming "views of subject matter held by designers and the concrete objects, conceived, planned, and produced as expressions of those views" (Buchanan, 1992, p.19). It must also be mentioned that design history is relatively short in comparison with "the history of many other academic disciplines" (Fallan, 2010, p.1). This is pertinent to know because the discipline of design history emerged from the discipline of art history and has inherently shared some of its suppositions (Calvelli, 2009). Accordingly, in the same way we ask design students to be critical of design itself, we must also get them to cautiously analyse what has been written about it. This is because the history of design history is "a record of the historian's views regarding what they conceive to be the subject matter" (Buchanan, 1992, p.19). Michael Bierut (2007) informs us that there are two preferred methods of recording the subject that seem to be most apparent: one is the documentation of design history as the product of a series of imaginative designers, and two is its recording as the product of extensive "anonymous historical forces" (p.107). Sometimes we get one, sometimes the other. Occasionally "we get a mix of the two. But what we seldom get is the messy truth in between" (Bierut, 2007, p.107).

As practising designers, there should be a bit of a design historian and design theoretician in all of us. After all, acquiring an accurate and deep understanding of design and the everyday is not something we are terribly unfamiliar with (Venturi et al, 2009). Design permeates our lives and it is "visible everywhere, yet it is also invisible – unnoticed and unacknowledged" (Lupton, 2009, p.6). Ironically, many of the greatest examples of good design or a design goal that is achieved are often objects that people do not consider to be designed at all (Hustwit, 2009). For example, the 'post-it' note. It is something that we fail to properly appreciate. People do not think of things like this as being designed and what they do not understand is that from the minute their day begins "almost everything that has filled their world has been designed in one way or another" (Hustwit, 2009). As a contribution to design and for the use of designers themselves, one could write a gargantuan amount of beneficial information on an object like the post-it note and the narrative behind its conception. Therefore, any supercilious attitude or partiality towards the use of visual tools over the use of verbal tools must be eradicated from our students' minds. Design schools must not only support students in creating designs from our well-loved visual tools, but also encourage them to accumulate "a body of scholarship and critical writing" (Heller, 2014). By doing so undergraduates will cultivate their historical perspective and further enhance their professional practice. In his chronology of design [graphic] it is Philip B. Meggs' view that:

*If we understand the past, we will be better able to continue a culture legacy of beautiful form and effective communication. If we ignore this legacy, we run the risk of becoming buried in a mindless morass of commercialism whose mole-like vision ignores human values and needs as it burrows forward into darkness. (Meggs, 1998, p.viii)*

Without any doubt then, verbal tools like the documentation of the reasons for former design decisions can facilitate a gateway into the stories of designed objects from the past (Michl, 2014). Design history then can "become a tool for, and perhaps even a key to, better design" (Michl, 2014, p.446). This is because there is a story embedded in all objects. For example, Armin Hoffmann (as

cited in Poulin, 2012, p.152) tells us that objects such as the “poster does more than simply supply information on the goods it advertises; it also reveals a society’s state of mind”. Therefore, when fishing for knowledge you have the ability to “get as much out of a paperclip as you can from a van Gogh” painting (Godson, 2015). For designers then apophthegms like ‘what’s in the past is in the past’ should never be taken so literally. In more ways than one, we must exploit the bygone.

### 3 Perceiving Tools

Classically, tools have been perceived as practical extensions of the hand that allow us to “control and manipulate the physical environment” (Knörig, 2008, p.18). Most notably, this perception of tools as physical aides was most prominent during the Eighteenth Century when the use of tools was considered to be the chief characteristic that distinguished humans from animals (Knörig, 2008). However, this view is no longer supported as this perspective is now much more differentiated. Nonetheless, the means to conceptualize and manipulate tools in a complex manner remains a “distinguishing characteristic of humans, and forms a promising milestone in human evolution” (Wadsworth & Kana, 2011). The way in which we think about design – and the particular design tools that we choose to derive benefit from – has a lot to do with how we have been taught about the subject. Additionally, not only do tools we call upon set the constraints for what we can design, they also define how we perceive our work; they structure our approach and determine how much effort the task will consume (Knörig, 2008). Therefore, our perception of a tool’s significance plays a determining role in whether we choose to use them or not. Fundamentally, the way in which we perceive things is a process by which we interpret the world around us. However, perception must not be mistaken for vision. Mary Zalla helps us to distinguish between these two abilities, she illustrates how:

*Vision is concrete. It observes. Perception is more abstract. Perception leaps beyond observation to judgment. We see what we see, but what we perceive is a combination of what we see, our past experience, and our particular point of view on a situation. (Zalla, 2014)*

What the brain does is make assumptions about the world to “overcome the inherent ambiguity in all sensory data in response to the task at hand” (Ward, Grinstein & Keim, 2015, p.82). For that reason, when we begin to answer a design brief, and even before we open our toolboxes, the mere perception of the tools we might use has a huge impact on our design process (Wadsworth & Kana, 2011). When in the hands of the proficient craftsmen, appropriate tool-use is a powerful resource that intrinsically strengthens our capabilities and capacities (Lutters, Van Houten, Bernard, Mermoz & Schutte, 2014). In addition, Jerker *Lundequist* (as cited in Östman, 2005, p.63) emphasises how knowledge is not just simply “knowing a fact about an object” and how it also encompasses an understanding of how to do what it is you are about to do and the meaning behind it. Therefore, if we are able to familiarise ourselves with and correctly perceive the advantage of a particular tool’s use, then when appropriate, it is likely that this tool will be chosen for the task at hand. On the other hand, if we have an ill-informed perception of a tool it is highly improbable that this tool will be called upon to help us with what it is we are trying to accomplish. Evidently, the way in which tools are regarded, understood, or interpreted are of pivotal significance to the end result of a design. As a designer, scholar and educator I have a fervid interest in the role that verbal tools play within the spheres of design education, with a specific avidity for the integration of design history, theory and studio practice. However, in many centres of learning the influence that verbal tools exert on the design process is seldom given the appropriate attention it deserves. As aforementioned, this lack of attention is the result of a favoured attitude towards the use of tools that create images rather than those that exist in the form of words. Admittedly, I was once an inexperienced novice unaware of what verbal tools could offer and how they can benefit contemporary design practice. I naively perceived tools like design history as an amalgamation of historical events, obsolete facts and besmirched objects. While I was an undergraduate or a ‘designer-in-training’ although great efforts were made to integrate the history, theory and practice of design as a holistic experience

rather than as isolated subjects, the majority of my fellow students and I viewed our critical and contextual studies as extraneous, almost burdensome and in many instances as if it interfered with our on-going studio practices. Consequently, the verbal tools available to myself and the other undergraduates were not considered as important a tool for us, especially when compared to the enticement of tools available from our beloved Adobe Creative Suite. This unenlightened thinking was likely because at the end of a student's scholarship, a strong portfolio tends to be the coveted finished product rather than an appreciation of history (Heller, 2004). Unfortunately a lot of callow designers are inclined to think in a similar manner as I once did; that verbal tools are trivial, that they are peripheral and that they are inessential to growth and evolution. They are in fact, quite the opposite.

The current teaching and assimilation of what it is design historians write about, is an activity that most closely resembles that of traditional academic disciplines. Daniel Fallman (2008) highlights that this is because the principal goal of historicising design is "to build an intellectual tradition within the discipline, and to contribute to an accumulated body of knowledge" (p.9). Furthermore, it is when we use verbal tools that the impact and input that associated disciplines have on design is most apparent. For instance, when designers collaborate and work with other fields of expertise such as psychologists, engineers and anthropologists, they soon reference and adopt elements of "another disciplines' techniques, practices, and theories" (Fallman, 2008, p.9). Therefore, when contrasting ideas and opinions are brought to the table and we exploit both the visual and the verbal, the greatest concepts are conceived. As emphasised on the DRS 2018's website, design and designers "flourish in a state of flux and the most interesting work can emerge from the chaos" (DRS2018a, 2017). This is largely due to the fact that design synthesises and catalyses other disciplines (DRS2018b, 2017). Accordingly, a respected perception of design history should inevitably lead to an advantageous understanding of how the subject can operate with and be of aid to other verbal and visual tools. Design's history can be used as an oscillating resource that unites the 'How' and the 'Why' in order to produce the 'Now'. Therefore, my current ardour is not so much verbal tools 'verses' visual tools but, as might be expected, more along the lines of how they compliment one another and work simultaneously to achieve greater design goals. I encourage designers of today and 'designers-in-training', to do their best not to see valuable verbal tools like design history as a multitude of monotonous hypotheses, but as readily available and also as peerless as a mentor as anyone could possibly wish for.

The way in which students perceive design history along with the current nature of design itself "are tremendously important to the future of the practice" (Frimpong Acheampong & Berg, 2015, p.2). Therefore, the subject must be seen from a new vantage point. We must also tackle any ill-informed perception of design history as just being something associated with the 'old'. The fact that a historical object is old is only the investigational tip of the iceberg, there is much more complex details beneath. In addition, Jan Michl (2014) tells us that objects of the past "do not really dwell in a past, in the sense that they disappear from our present" (p.449). For example, many of the objects of the past exist in physical form right now and so do their numerous images (Michl, 2014). Therefore, the defining difference between design past, design present and design future can sometimes only be a matter of perspective. Deep down, we are in some sense, fully aware of this point of view but accepting the truth in it has rather shocking implications (Michl, 2014). As this perspective is quite arcane it is difficult for people to perceive how objects of the past can be contemporaneous with ourselves. Still, in order to exploit design history to the fullest degree we should consider this informative and educational tool in terms of design *present* rather than design *past* (Michl, 2014). Design students must perceive design history "as a pattern book to be plundered at will" (Baljon, 2002, p. 334). Michl highlights that by shifting our perception of what we define as antiquated and what we define as modern we can transform the past:

*Into a living supply of stylistic inventions and discoveries, a supply that...can be tapped, re-employed and redeveloped by inventive and daring designers in order to satisfy the*

*diversity of tastes and plurality of stylistic preferences among the public of today. (Michl, 2014, p.450)*

At present, we must extol the currently active designers who do make use of their erudition of the past and add to the development of contemporary design practice (Triggs, 2011). Yet there is still an exigency for more qualified design historians to dig deep, uncover the goods and provide an understanding of objects in their historical and stylistic contexts (Triggs, 2011). There is also a further requirement for designers themselves – and those in training – to deconstruct the boundaries of what was, what is and what will be by understanding the milestones of the past, incubating this knowledge and executing it at will.

By force of circumstance the methods through which design history is taught in each educational context ineluctably differs, and also evolves. Therefore, this body of writing is by no means an unkind castigation on any institution, department or on the methodological procedures that were in place at the time. I must also avow that although experience does provide valuable insight, it does not carry much conclusion beyond opinion. It is from personal observation that I maintain this need for reinventing the way in which student's perceive design's history. More importantly, reader beware, it is a review sparked from the way in which one individual was taught. Nonetheless, if design history is to progress within educational institutions, I strongly feel it is the perception of the use of verbal tools that needs to be challenged in order for up-and-coming designers to acknowledge their crucial significance, their full potential and their value in professional practice. Sadly if the existing attitude towards the value of verbal tools is not questioned, this same deficient perspective will be brought out into the real world and applied there. Graduates will not have changed their minds about it. Thus, the cycle of design history's insufficient exploitation continues. If educators are familiar with this inadequacy, design historians and those who impart the subject's content – or those who are in charge of its administration – may wish to reconsider the placement of its history as it is currently being practised (Buchanan, 1992). Having said that, I must admit that during a student's training three or four short academic years is a compact amount of time to try and 'fit' everything in. Over the course of an undergraduate's scholarship, perhaps this limited timeframe has an effect on why the use of visual tools is given more attention and the importance of using verbal design tools is left understated. Due to my own past dissatisfactory perception of design history, I salute the educators, historians, theoreticians and practitioners who are, at present, working tirelessly to ensure that the discipline retains vitality and relevance to contemporary problems. In recent years I have been lucky enough to witness how some institutions have, in fact, implemented models for design history that are indeed exemplary and supportive to their students' practice. With that said, I write this paper in the hope of provoking thought and instilling initiative in others who have not been so fortunate as to experience such paragons. We must continue to discover additional innovative and instructive possibilities in order to improve the perception of the subject's capabilities in all centres of learning.

Within contemporary pedagogical contexts, it is through the encouragement and use of design history for design future that young designers will come to perceive its true mileage. The subject should be seen as a cornerstone for “understanding theory and practice, not an expendable filler” (Heller, 2014). As thought and visions cannot be communicated directly and can only be conveyed with the help of tools, one has to express their ideas through gestures, by initiating dialogue, sketching them or writing them down (Gänshirt, 2007). Therefore, in today's schools of design, similarly to the way in which we maintain and promote the use of visual tools, there is a great need for our verbal tools to be equally supported and nourished. The knowledge and use of alternative types of tools has immense potential and should unquestionably be used to cultivate contemporary design practice. Clearly, the tools we choose to utilize and make full use of – and our perception of their significance – sway the outcomes of the designs we create. It is evident then that all tools play a crucial role in the creative process and often have paradigm-shifting effects on the designs created (DRS2018c, 2017). Therefore, equitably exposing students to the advantages of exploiting all of the tools available to them is the most powerful pedagogical aid for catalysing design capability. Most

design students are of course skilful makers but they must also “be equally good as thinkers. They must be able to research, analyse, critique, and write” (Heller, 2014). Nowadays, the verbal tools I write and research with are as treasured as the visual ones I take advantage of. When I design I use both visual and verbal tools in order to agglutinate information, conceptualise, and by extension produce the best design possible. I use them to generate ideas, to unearth innovation and to critically communicate arguments of design. Between my finger and my thumb the squat pen rests, I’ll dig with it.

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