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Educational Psychology in the Time of Digitisation

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ABSTRACT

Digitisation has profoundly altered both the objectives of education and the means of their achievement: the consequent and complete transformation of education's organisation and delivery is anticipated and welcomed. Specifically, given that all teachers and all learners, worldwide, are now connected, 'education' now means 'education in the context of digitisation', manifest in the evolution of the Global School. This universal establishment is characterised by learner-owned curricula and by learning-supportive pedagogies that integrate online and traditional methodologies. Once it is fully operational, there should be more equitable, ethical and enjoyable (and far less economic-circumscribed, test-oriented, world-of-work-dominated) arrangements. Such seminal developments (even if they emerge other than as the present authors prophesy) will impact profoundly on the roles, objectives and methods of educational psychologists. This paper explores some of the potential consequences of this ground-breaking reality for them in relation to self-regulated learning, scaffolding, test performance, anxiety and bullying.

Keywords: Educational Psychology; Digitisation; Global School; Self-Regulated Learning; Scaffolding; Test Performance: Anxiety; Bullying

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INTRODUCTION

Digitisation involves a pivotal leap in human potential as profound as the wheel in terms of development and as significant as the book in relation to information. It is not so much desirable as inevitable, less needed than unavoidable: in our interpersonal communication, in our social interactions, and in our unremitting entertainment, (almost) all of us are virtually transformed. The society within which the teachers operate and into which the learners are moving has altered pivotally – and will be characterised by on-going alteration. And this is total rather than fragmentary: piecemeal ICT 'add-ons,' once seen as innovative and ingenious, have become dysfunctional distractions within an outdated system. The objective now is for education to be restructured for our times, with Digitisation as the cohesive force. Such a thoroughgoing surge forward in the ways in which the transmission of information and the sharing of ideas and the stimulation of creativity may best and most happily be achieved necessitates and enables entirely fresh educational approaches, as prognosticated in below.

The virtually worldwide recognition that everything is transformed has yet to be matched by any fundamental reshaping of educational structure, curricula, content, culture or philosophy. Specifically, the preoccupations of educational psychologists have altered but little in essence (as opposed to extent and erudition) since the discipline materialised. And yet the root and branch reforestation of education, in whatever manner it manifests itself specifically, will have substantial implications for the contributions and significance of these professionals. A selection of their current areas of interest, drawn from topics addressed in recent issues of relevant journals (thereby constituting a reasonably representative, if not a statistically random, sample) is considered in the light of those forthcoming and fundamental educational changes associated with Digitisation.

Background: The Global School

In a sense, there is now the one universal lifelong learning community, created by universal connectivity and worldwide inter-dependence, which may be referred to as the Global School (Uys and Douse, 2017). The

present authors' conceptualisation of this institution embodies a number of principles, including the recognition that:

- Education will be recognised as entirely distinct from and utterly unrelated to the world of work;
- Education must be enjoyable of itself: the long and winding road to happiness by way of skills, credentials, employment, productivity, income and wealth may and should frequently, be short-circuited-schooling should predominantly be fun;
- Test-obsessed, performance-comparison-driven schooling must be relegated to the dark (i.e., pre-digital) ages;
- The Global School offers an escape route away from education as indoctrination (whether aimed at political, religious, military, exploitative, egalitarian, status compliance, colonialist or environmental goals);
- Over the pre-primary and primary stages, children should become educationally self-directed;
- At the secondary and later, including lifelong, educational phases, the learners 'own' the curriculum and the pedagogy is learning-supportive, incorporating virtual and face-to-face learning; and
- Nothing educationally will ever be the same again.

More detailed descriptions of and convincing justifications for the Global School may be located in other articles and presentations by Douse, (2013) and Douse and Uys (2018).

Towards the end of the above set of principles, it is noted that digital and traditional methodologies will be happily and seamlessly integrated within what is termed 'flipped classrooms'. Reflecting the emerging duality of consciousness – the virtual and the immediate – this combination will be so commonplace as to become unnoticeable, as illustrated in the present authors' description of some 'typical' Global School activities:

"*There are about thirty teenagers in the room. Most are deeply involved with their handheld devices, type-tapping away, speaking, listening, photographing, manipulating graphics, researching, up- and down-loading, dispatching items for instant printing. Some are finalising assignments for submission; one group is building up a family history diagram on a wall screen; a teacher is attending face-to-face to another's question about genealogy. But this isn't the entire class – some twenty others, including adult learners, are tied in from locations elsewhere, mostly far overseas, all having closely followed the teacher's introduction and, along with those physically present, proceeded in their selected directions at their own pace. This is a Caribbean History course, focussing today on indentured plantation workers. Live interviews with some of their descendants are available, along with the film, historical documents, virtual museum visits and other relevant materials. The learners are labouring in the fields, encountering the economics of sugar, perceiving it from the plantation owners' perspectives, and then from the workers' families', and each is reflecting upon the overall phenomenon*."

In the Global School, Digitisation-enabled methodologies are embedded within a structure embodying humane values, lofty aspirations and contemporary common sense. Recognition of the magnitude of on-going and future economic and labour market changes, within the broader context of personal and socio-cultural actuality generally, makes clear that schooling cannot explicitly prepare people for situations in which they will need to frequently upgrade their skills, especially when the nature of those skills are unknowable. Rather, the love of learning and the ability to learn, to master digital technologies and to handle information expertly, and to make good choices on what best is to be learned by them and how are the competencies required. Moreover, citizens/consumers/learners/teachers/workers/people the world over will participate in, influence and enjoy the multifarious and largely unforeseeable experiences that will undoubtedly occur – and education will reflect and respond to that actuality, not as selective preparation but as reflective understanding.

Specifically, educational psychology now means 'psychology supporting education in the context of Digitisation.' Practitioners will need to raise and revise their game in order to envisage, delineate and prepare for whatever a well-rounded education in this Digital Age consists of. Our contention is that it will be embodied in the Global School but, in humility, we acknowledge that various variants are possible. But, in any case, the last of those principles set out above (that 'nothing educationally will ever be the same again') will assuredly apply. In terms of learning we are living in the most exciting times since Socrates. Accordingly, with heads in the cloud but with both feet firmly planted upon *terra firma*, let us now explore some possible implications for educational psychology of this ground-breaking reality.

Self-Regulated Learning

Educational psychologists have given much attention to self-regulated learning (SRL) from both theoretical and practical perspectives (Schunk and Greene, 2018). Their interest – taking that particular compendium as an indication – seems more focussed upon understanding how SRL operates as opposed to enabling learners to apply it for practical purposes. A consideration of future directions for research on depth and regulation of strategic processing (Alexander, 2018) addresses such questions as the association between the cognitive and the metacognitive (Coertjens, 2018) and the influences of depth and regulation upon academic performance. Contributors to that debate come close to consensus on the desirability of enabling "students of all ages and backgrounds to manifest those thoughts and behaviours indicative of deeper processing with regularity, regardless of the task or domain with which they are engaged,such depth of processing is intertwined with the regulation or monitoring of performance and tied to better learning or task outcomes" (Alexander, 2018).

While it is assuredly the case that "learning is ultimately a complex, multifaceted, and dynamic process that cannot be fully represented by any one theoretical framework, set of beliefs, or cluster of processes" (Alexander, 2018), the call for educational psychologists to "richly and accurately describe certain dimensions or mechanisms of that process in such a way as to enlighten students, teachers, educational leaders, and policymakers" (Alexander, 2018) is well-made and, in respect of enlightening learners, attains especial poignancy in the evolving Global School situation. Enabling learners to reflect upon, understand and improve their strategic behaviour and learning approaches becomes paramount in the emerging situation wherein they, from lower secondary onwards, are responsible for the areas, efficiency, pace and objectives of that learning, albeit in constructive partnership with their teachers – who may also be fellow learners. There are already indications that teachers' computer literacy is linked with learner performance (Saibu et al., 2018). As the Global School eventuates, the emphasis moves from the external ('what strategies are associated with successful learning?') to the personal ('how may I learn more of that which I choose to study more effectively and enjoyably?')

However, removing marking and assessing and comparing from the educational (as opposed to the skills-linked training) scene calls into question the criticisms of "overreliance on self-report measures and spotty connections to academic outcomes" (Alexander, 2018). No doubt the "recollections, reflections, explanations, and interpretations of participants" and the "limitations of self-report data, whether gathered through think-alouds, interviews, questionnaires, or focus reports" (Alexander, 2018) are impediments to research reliability and, in that context "the total reliance on self-report data remains problematic" (Alexander, 2018). And yet, in the evolving reality situation wherein 'academic outcomes' attain fresh meaning, unless that ultimate research objective is centred upon enabling learners to review and enhance their own learning strategies, within the context of their own learning objectives and broader educational goals, much of such investigation will, in practical terms, be vain.

Along with the Global School's recognition that, from the secondary phase onwards, learners will 'own' their curricula, comes a realisation that this involves an enhanced responsibility for their own learning strategies. No longer dependent upon persistent teacher feedback or cramming for exams, the learner, who has opted to study, for instance, *Mathematical Ideas for Non-Mathematicians*, will need, desire and be best poised to reflect upon their own approaches. While it is entirely reasonable, in the admirable academic search for truth, to call for findings based upon "more than self-report data not solely reliant on the recollections, reflections, explanations, and interpretations of study participants" (Alexander, 2018), in terms of the individual learner, honing these personal and subjective skills to practical effect is the paramount objective. With the focus moving towards self-directed and personalised learning, and with the objective of that learning being enjoyment and self-fulfilment – as opposed to surviving to the next stage of the competitive academic pyramid – narrowly-defined 'achievement outcomes' lose significance. Admittedly, until the theoretical is achieved the practical remains imperfect – but recognising that improving, through reliable research, of the understanding of SRL mechanisms and effective strategies, the ultimate objective should give direction if not boundary to research.

The Global School integrates digital and traditional forms of learning, to which some SRL studies are especially relevant. Deekens et al. (2018) observe the obvious in that many of today's learners use the Internet as a key source of information both in and out of school and their study of SRL in computer-based learning environments suggests that "students who enacted more frequent monitoring also enacted more frequent deep strategies resulting in better performance on academic evaluations" adding that "the more learners invoke monitoring, the more likely it is they realize the need for better strategies, and then implement them (Deekens et al., 2018). Responding to that conclusion, Alexander (2018) advocates that "metacognitive monitoring and deep strategy should be taught in tandem, to increase the likelihood of learners enacting both. This advice – inferring that 'taught to learners' is intended – gains increased significance in the Global School (GS) situation, although the means of enabling these techniques to be communicated in an effective yet non-evangelical manner will require much thought. GS learners are responsible, not only for their curriculum but also for how they, reinforced by empathetic teachers applying supportive pedagogies, go about mastering it. It is for them to orchestrate their skills and strategies across the varying levels or in different categories, it is for each learner to adopt their personal processing rituals and routines, and to experiment with and refine these as they will.

Yet the reported research helps to build up the picture. Moos and Bonde (2016) examining the effectiveness of embedding self-regulated learning prompts in a video designed for the flipped class model, indicates that "participants who receive the embedded prompts engaged in more SRL processes (e.g., activating prior knowledge, monitoring understanding and controlling the video), the embedded prompts enhanced instructional efficiency, as evidenced by the significant difference in learning outcomes and non-significant difference in mental effort" (Moos and Bonde, 2016). Marton and Säljö's (1976) consideration of Qualitative Difference in Learning , describes an attempt to identify different levels of processing of information, relating that to the identification of "basically different conceptions of the content of the learning task" and describing "the corresponding differences in level of processing in terms of whether the learner is engaged in surface-level or

deep-level processing" (Marton and Säljö, 1976).
An exploration of learning strategy convergences across a year at university (Fryer and Vermunt,2018) indicated "strong connections between processing and regulation strategy changes across first-year university experiences". Previous studies and the current study, find the notion of the 'Asian' learner', which Fryer and Vermunt, (2018) report as "widely accepted", somewhat disturbing. Winne's (2018) exploration of how a 'levels-sensitive' approach might be implemented in research aboutself-regulated learning suggests that "the levels construct may not be particularly useful for distinguishing among processe. SRL *per se* is not a deeper kind of processing. Instead, it is processing more complex – deeper – information about a different topic, namely "processes for learning" (Winne, 2018). Perhaps a Global School programme on '*Self-Directed Learning Strategies*' would be appropriate and popular.
The application of the Eye Movement Modelling Examples technique (Scheiter et al., 2018) in exploring learning strategies (suggesting that "those with a substantial base of content knowledge did not follow the recommended eye-tracking pattern when integrating text and visual media"), may be linked with earlier work on the perceptual aspect of skilled performance in chess (Charness et al., 2001). They argued that "expert players perceptually encode chess configurations, rather than individual pieces, and, consequently, parafoveal or peripheral processing guides their eye movements, producing a pattern of saccadic selectivity by piece saliency". Indeed, just over a century ago it had been observed and reported that the eyes of the great Capablanca roved across the board in a similar manner (Daily Colonist, 1918). Every club player striving for mastery soon recognises that pupil movement follows, rather than leads, pupil performance: you cannot create chess champions by enhancing eye movements. The extent to which this principle – that effective learning strategies are brought about by enriched knowledge and enhanced understanding, as opposed to the former facilitating the acquisition of the latter – remains an important area of investigation.

Scaffolding

Serious attention has been given to the phenomenon of 'scaffolding' (Wheeler, 2018; Yuill and Carr, 2018) and also, for the concept's classical origins, Wood et al. (1976) addressing, in general, the active support provided to children's learning by adults and, more recently and specifically, family reinforcement is such areas as school readiness and homework encouragement. No learner is a remote and deserted island and such scaffolds have also been incorporated in computer-based learning environments (Azevedo et al., 2005). That study uses Microsoft Encarta materials on the circulatory system – as done by Deekens et al (2018) but modified to test the effects of three kinds of scaffolds embedded in the computer-based learning environments. Scaffolds reflect the nature and purpose of the edifices propped up and a fiercely competitive and world-of-work oriented educational edifice may be characterised by domestic anxiety, private tutoring, tiger mums and inordinate incentives for examination successes. That these scaffolds stray into neighbouring properties has already been acknowledged in the discussion on self-regulation involving explicit questions or prompts requiring monitoring or regulation posed by a researcher, teacher or peer.
The evolution of the Global School, incorporating learner-driven, enjoyment-directed and cooperative, worldwide approaches, produces a different kind of construction site for the erection of scaffolds. Current research into, for instance, home interaction related to children with disabilities or with language difficulties, attitudes and practices regarding homework support, and the differential interactions with mothers and fathers (Yuill and Carr, 2018), would remain relevant but education's ceasing to be based upon assessment, comparison, selection and predominantly local concerns constitutes a major cultural and contextual shift. Within particular families, the emphasis alters from one of giving 'our' offspring the best possible shove up the most efficacious ladder towards a good career towards one of encouraging and facilitating their fulfilment through enjoyable learning in areas of their own choosing. This is illustrated in these observations obtained by the present authors from a student attending an experimental school (with some emerging GS features) and his mother:
Idris: "I think that she would have liked to have been one of those 'tiger mums' always on at me to do more homework and to come top of my class. Not only are my parents bewildered at not knowing how I'm doing compared with everyone else, they don't understand why I work long hours when it's not competitive. I tell them the truth, that it's because I'm fascinated by what I'm studying and this still seems strange to them."
Sarat: "I am Idris' mother and, like he says, I'd expected at this stage of his life to be a tiger mum.
"But is so different from what I experienced, from day one in grade one it was push, push, push all the time. In the traditional school system, 1:1 attention was not there and most teachers weren't mentors and there was a lack of strong values and self-discipline. There was no real attempt to foster each child's ability to identify who they are and what they can be good at. Most children were not motivated, many became burnt out or just not interested. Which is why the parents who bothered had to keep pushing. It develops within them a readiness to learn and explore which comes from inside. Its focus goes beyond standardized testing and in a different route from getting a good job. I can see that it's better, but it does need some getting used to, more by the families than by the children."
Certainly self-regulation gains in significance: readiness for curriculum ownership is a particular requirement of the transformed system, and this involves self-regulation and, indeed, the breaking free of enduring external

scaffolding. As Wheeler asks: "When does external scaffolding become unnecessary or even distracting for learners who have developed the ability and tendency to self-scaffold or who come to a learning task with the knowledge and interest to engage in self-monitoring?. Ideally, this should have occurred by the conclusion of the primary phase in that, from secondary onwards, each learner becomes self-standing, supports withdrawn, scaffolds dismantled.

Anxiety

Educational psychologists have, over the decades since their profession materialised, given close attention to anxiety in relational to educational participation, achievements and even (although very rarely) enjoyment. One earlier discussion of 'General Emotionality' lead to "the conclusion that anxiety questionnaires are likely to measure (i) the likelihood of being threatened by the external world, and (ii) a specific way of reacting to such threat" (Frost, 1968), so that quantitative data needed to be handled carefully. Such studies as those of Sarnoff et al (1959) were part of the substantial body of evidence that cumulatively brought the United Kingdom's 'Eleven-Plus' into disrepute, although this particular investigation found no correlation between Test Anxiety Scale scores and nearness in time to, or performance in, the 11+ examinations. More recently, Putwain et al (2015) explored test anxiety in relation to 'academic buoyancy' concluding that the "worry, but not tension, shows a negative feedback loop to academic buoyancy".

A more recent study explores the mechanisms underlying the relationship between 'math anxiety and math performance', specifically testing the "simultaneous mediating role of working memory and math self-concept" (Justica-Galiano et al., 2017) and establishing that both of those mediators appeared to contribute to explaining the relationship. This suggests to those researchers that a "working memory and self-concept could be worth considering when designing interventions aimed at helping students with math anxiety" (Justica-Galiano et al., 2017) and the explicit practical recommendations are welcome. It has also been shown that "students have a positive attitude towards mathematics when ICT is integrated in the teaching-learning inside the classroom (Aunzo and Climaco, 2015). Within the Global School, with mathematics being covered within a 'developing readiness for self-directed learning' curriculum at the pre-school and primary stage, and with learners owning the curriculum thereafter, and with examinations and test hurdles eliminated, anxiety should be significantly reduced, both in relation to that 'queen of the sciences' subject and generally.

Just a couple of decades ago (when people still sent faxes to one another and took rolls of film to High Street chemists for developing), computing was regarded as a branch of mathematics: since then, all subjects, all academic disciplines have become subsets of Digitisation. And that – the apparently all-consuming cyber world which, to older generations, the young appear both to inhabit and to be subjugated by – is a cause of parental concern, in many cases best described as 'moral panic' or, indeed, 'family anxiety'. Video games are a case in point, with the WHO now recognising 'gaming disorder' in its more recent International Classification of Diseases. Psychologist Peter Gray's response is that "for the great majority, video gaming is a healthy, enjoyable, brain-building activity". Just as, reportedly, increasing numbers of parents are banning children from video gaming, thereby, as Gray observes, "depriving them of one of the few forms of play still available to them" (Gray, 2017), so also are some schools requiring mobile phones and other devices to be left outside the classroom door. The Global School takes a quite different approach, reflecting the duality of contemporary consciousness – the virtual and the immediate – harnessing the internet-based and the face-to-face as the one integrated learning methodology.

Macauley (2003), in his exploration of the effects of web-assisted learning on anxiety, particularly for 'novice adult students', notes that "as increasing amounts of study materials migrate on to the Web, a future is now conceivable in which using the Web will be the most common method of studying", although his work with "two groups of 30 postgraduate students" indicated that those who "used the Web recorded significantly higher anxiety levels than those who did not" (Macauley, 2003). But, while much that is positive may well have occurred, in terms of internet familiarity, over the last fifteen years, the competition has become more intense and the temptation to over-assess has intensified due to the convenience of computer-based automated marking. Examinations and the prevalent testing to destruction culture are major causes of anxiety, serious health problems and even suicide. As recently reported by some UK learners:

"…people had to leave the hall as they were having panic attacks and crying. Many were having nosebleeds from all the stress… acne, hair loss and sleepless nights – believe me I am a failure… lasting damage, physical and mental; like a ghost drifting through and just trying to reach the end, for the months of May and June we do not feel human any more" (Weale and Holmes, 2018).

Educational psychologists have documented these deep problems and contributed authoritatively to the public debate. Sometimes however – and let this be recognised – some have supported and benefitted from the testing regime through their advocacy and application of particular selection instruments (American Psychological Association's PsycTESTS repository boasts of "more than 1,500 ready-to-use items"). By taking exams and the entire test-oriented ethos out of education, while supportively and intelligently providing personalised and targeted formative feedback as needed by exploring artificial intelligence, the Global School removes the immediate cause of such miseries and maladies. Which is not to deny that other anxiety- and health-related

challenges will emerge within the transformed situation, nor that valid diagnostic tests sensitively administered and intelligently interpreted are sometimes positive contributions, nor that anxieties will emerge when the inevitable competitiveness of work-related training cuts in at around mid-adolescence.

Bullying

Drawing upon a recent meta-analysis of bullying and cyberbullying (Foody et al., 2017) it may be summarised that these two categories of victimisation are similar in that each involves intentionality, repetitiveness and power imbalance and a significant link exists between both kinds of bullying experiences and social, behavioural and psychological problems. They differ in that the latter can consist of threats, verbal abuse, the large-scale spreading of images and videos, defamation and identity threat. A cyberbullying incident can happen in one's own home while "the potential for a larger audience can contribute to increased levels of shame, embarrassment, humiliation and a feeling of a lack of control for the victim. It can also make it more difficult to prove a cyberbullying incident, as the identity of the perpetrator can be kept anonymous and there are often no witnesses to the initial posting or sharing of the photo, video or information (Foody et al., 2017).

Hunter et al. (2007) examined the extent to which peer-victimization and bullying are empirically similar, reporting that almost a third of pupils aged between 8 and 13 years attending mainstream Scottish schools "recounted experiencing peer-victimization, and of these 38.1% (11.7% of the whole sample) were categorized as victims of bullying". West (2015) states that "7.9% of those aged 16-19 who study in colleges in England reported being victims of cyberbullying and 1.9% admitted cyberbullying others" (2015). Bevilacqua et al. (2017) join others in reporting that "bullying and cyberbullying are common phenomena in schools (having) a significant impact on the health and particularly mental health of those involved in such behaviours, both as victims and as bullies. Kyriacou and Zuin (2016) add that there has been a "rapid increase in cyberbullying of teachers in schools by their students. As with anxiety, quantitative data need to be handled carefully. Foody et al. (2017) suggest that moderating factors, such as assessment technologies, answer scale and time frame, can affect reported prevalence rates. Nevertheless, as the Global School involves, in universal reach and virtual proximity, learners and teachers of all nations, ethnicities, categories of disability, sexual orientation and (almost) all ages, bullying, especially of the cyber variety, is a paramount challenge.

In the study of Foody and Samara (2018), the point is made that "schools are turning their attention more and more to the well-being of their learners and to programmes which can increase positive coping strategies and decrease mental health problems while noting that schools engage with one anti-bullying programme on a whole school level and do not link it back to mental health or well-being programmes that are often implemented separately. There are some indications of "the need to treat cyber-bullying as a standalone entity without the confounding role that the more traditional concept of bullying plays in cyberbullying definitions" (Grigg, 2012). Mindfulness techniques have been advocated as a proactive way to target well-being for classroom applications (Roeser et al., 2018), along with Acceptance and Commitment Therapy as appropriate for school-based interventions, as "it aims to help students to become aware of, and understand their emotional responses to a challenging situation (such as peer bullying), decrease their avoidance of dealing with such emotions and increase problem solving skills" (Foody et al., 2015).

Considerable research has been carried out recently regarding cyberbullying (O'Neill and Dinh, 2015; Livingstone and Smith, 2014), also, the Cyberbullying Research Centre offers substantial resources and suggested strategies). Betts and Spenser, (2017) observe that technology was seen as a facilitator and a mechanism for maintaining social interactions. However, participants reported experiencing a conflict between the need to be sociable and the desire to maintain privacy. Brewer and Kerslake (2015) suggest that together, loneliness, empathy and self-esteem predicted levels of cyberbullying victimisation and perpetration. There are indications that self-esteem and empathy oriented interventions may successfully address cyberbullying behaviour (Betts and Spenser, 2017). Kyriacou and Zuin (2016) advocate that "teachers, head teachers, students, parents and welfare professionals need to work together to consider how best to deal with (this phenomenon), within the context of developing a positive school community ethos, the adoption of an anti-cyberbullying policy for the whole school, and addressing cyberbullying through the personal and social education curriculum. Deeper ethical dimensions also need to be explored.

Few could contest the contention that, in their current configuration, schools have a critical role to play in preventing and reducing cyberbullying through a process of awareness-raising, the education of the emotions and active participation of children and young people themselves (Cowie and Colliety, 2010). However, the suggestion that "these techniques can be taught to teachers through appropriate workshops and integrated into the curriculum (Foody and Samara, 2018) and the observation that "schools are turning their attention more and more to the well-being of their students and to programmes which can increase positive coping strategies and decrease mental health problems (Foody and Samara, 2018), incorporate an outdated standpoint if intended to be applied beyond the Global School's primary phase. It will be recollected that one key principle, presented above, was that it *offers an escape route away from education as indoctrination*: an application of this principle is illustrated in this observation made to the authors by an anonymous

professional:
"(We recognise) that 'Health Education' has long been seen as aimed at changing behaviour in such areas as personal hygiene, alcohol, tobacco, exercise and mental health. However, we have accepted the GS philosophy so that secondary 'Health' lessons and courses are now geared explicitly to upgrading understanding. For example, the basic 'Drugs' programme covers just about everything from coffee, through cigarettes and cannabis, to cocaine and it presents the pharmacological and the cultural and, as objectively as possible, the positives and the dangers, including legal penalties. What it doesn't do is preach and all of the teachers supporting the course are called upon to embody this non-judgemental approach. On completing the programme, the student will be able to make well-informed judgments. In practice, this has highly positive practical consequences, but those are not the programme's explicit objectives".
Such an approach would need to apply to both cyberbullying and mindfulness. Thus, a module on, say '*Bullying, Tolerance and Mental Health*' would be aimed at enabling understanding. If those who choose to study it, through their teachers' presentations and their own reading, dialogue, evidence-gathering and analyses, happened to develop heightened emotional intelligence, perception, caring skills for themselves and others, and insights that were linked with anti-bullying attitudes and actions, that might be regarded as a welcome bonus. But education is not indoctrination, even in a good and urgent cause: education is education.

Academic Progress

Some education psychological studies, including many of those looking at SRL, are linked with test performance and examination results. For example, Fryer and Vermunt (2018) measured deep and surface approaches to learning and modes of regulation by Japanese learners at the beginning and end of their first year at college, establishing "a positive association between depth and frequency of strategy use, on the one hand, and regulatory behaviours and academic outcomes on the other". A wider exploration of the "research into the additive, interactive, and specialized effects of goals on school functioning. Liem, (2016) whose study looks beyond 'culturally Western settings, talks of "academic achievement and effort/persistence and reveals "a specialized effect on academic achievement and notable interactive effects on cooperative learning.
This utilisation of 'academic achievement' as an objective or external measure of (levels of) success raises the more general question of whether and how research into influences and actors upon academic progress has anything to offer in the emerging educational situation encapsulated by the notion of the Global School. When learners are choosing what to learn, and are doing so because they are interested rather than (their parents/teachers being) ambitious, and when the only feedback is constructively for each learner's benefit, there are none of prior attainment scores, course assessment marks or subsequent occupational progress grades upon which to apply erudite statistical analyses. That having been said, some learners will undoubtedly have difficulties in selecting or creating their courses and curricula and will derive less enjoyment, fulfilment and understanding from pursuing them than others will. As the Global School evolves, these consequences, less readily measurable than grades and certificates but none the less meaningful, will replace traditional 'academic progress' and, hopefully, will be attended to professionally and effectively, by educational psychologists.
Corcoran's, (2017) longitudinal tracking of academic progress during teacher preparation raise another kind of interesting issue from the Global School perspective. Specifically, the professional preparation of teachers, indeed that of any set of workers, is 'training' rather than 'education' and thus entirely outside the Global School remit – as would be their ongoing professional development, albeit occurring in relation to, and betimes physically within, educational institutions. Thus Corcoran's observations about 'ultimate academic goals', 'accountability', 'grades', and the linking of 'academic performance with outcomes in the workplace' are very much the proper concern of work-related training and entirely alien to the emerging educational system in which assessing, comparing, categorizing, selecting and world of work preparation are obsolete.
Assuredly the educational philosophy and pedagogic approaches of the Global School have significant implications for the roles and thus the professional development of teachers but just how this is taken on board within 'training' is as removed from 'education' as is the initial preparation and ongoing vocational upgrading of lawyers, chefs, fuzzy logicians, firefighters and tour guides. We are, at long last, entering a world where education is recognised as beyond measure and where the workplace is no longer allowed to colonise and define the classroom.

Conclusions

Digitisation will engender and enable a fundamental educational transformation and this, in turn, will have profound consequences for the priorities and practices of educational psychologists. The extent to and manner in which the Global School, as envisaged by the present authors, eventuates may be a matter of conjecture but, at the very least, the consideration of the consequences of that archetypal form of 'education based upon Digitisation' will stimulate constructive contemplation regarding roles and priorities responsive to these unquestionably unparalleled times .
Some fields will be radically altered, or even eliminated: careers guidance, for instance, will be outlawed from educational institutions but focussed upon when, from the mid-teens onwards at the instigation of each individual, work-related training, alongside education,

Table 1. Summary of Global School Implications and Educational Psychological Consequences.

Educational Psychological area	Relevant implications of the Global School's emergence	Key consequences for Educational Psychology
Self-regulated learning	Learners in charge of what and how they learn	Decline in measurement against 'norms'; provision of support for problems identified by learners; support for teachers in their new 'guide by the side' roles
Scaffolding	Family and other external scaffolds fade as primary phase concludes; self-supporting secondary and lifelong education	Developing learner confidence and an awareness of possibilities;
Test Performance	Blending of tangible and virtual; examination hurdles eliminated; learners setting their own goals from secondary phase onwards;	Extinction of many kinds of tests; guidance and support for learners with special needs within the evolving situation;
Anxiety	Education now focussed on learners' own perceptions of performance against individual goals; competition diminished, learner cooperation enhanced	Tensions as work-linked training commences;
Bullying	Cyberbullying; educational institutions apply anti-bullying policies, recognition of link with mental well-being	Understanding the phenomenon and supporting both the bullied and the bullies; enhancing awareness across broad school communities in the Global School context

commences (perhaps there will need to be a distinction between 'educational psychologists' and 'training psychologists).

Private, fee-paying and selective educational institutions will lose their exclusivity within the one universal school, just as the ubiquitous scourge of expensive private tuition will decline into meaninglessness. Other areas will continue relatively unaffected: there will still be learners with various categories of special educational needs, for example, although the abolition of grades, academic selection and the testing culture generally will certainly be relevant. Pre- and primary school readiness will remain an issue although, here again, the non-competitive and 'moving towards self-directed and personalised learning' pre-secondary culture will be of consequence.

As discussed, changes of foci and purpose by educational psychologists might be appropriate in some current areas of particular interest, namely self-directed learning, scaffolding, academic progress, anxiety and bullying: some possible implications and consequences are shown in Table 1.

And, of course, these examples, along with the more detailed imaginings in previous sections, are founded upon the present authors' forecast of what is most likely to eventuate. Which may well be, in its particulars but not in significance, contested. We believe that the Global School – or something very much like it – is upon us. We see the forthcoming educational transformation as a time of exciting challenges as opposed to perpetual problems. We trust that these conjectures regarding the radically changing roles of educational psychologists as Digitisation unfolds across education worldwide will be of interest, relevance and value even to those who, at least for the time being, do not in all regards share our particular vision.

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