Volume 40 Issue 10

NSW GOVERNMENT

Scan

The journal for educators

Australia's teaching workforce

Writing reports

The School Magazine's digital side

Improving students' online searching

Contents

Scan is a leading refereed journal, published monthly between February and November. Scan aims to bring innovative change to the lives and learning of contemporary educators and students. Through Scan, teachers' practice is informed by critical engagement with peer reviewed research that drives improved school and student outcomes across NSW, Australia and the world. Scan aims to leave teachers inspired, equipped and empowered, and students prepared.

Australia's teaching workforce 4

John Hattie explains the need for nationally consistent data about the teacher workforce to inform responses which build a sustainable, supported and high-status teacher workforce.

How to make reports easier and save K–6 teachers' time 9

James Hoffman suggests ways K-6 teachers can be more efficient and effective when writing reports for their students.

The School Magazine: a quality digital resource 19

Cheryl Bullow describes the rich collection of literature, resources and interactive content available digitally through The School Magazine.

'Drowning in information while starving for wisdom'. Helping students to maximise their online searching 22

Peer reviewed research
Dr Renee Morrison presents a detailed analysis of students' use of online searching and highlights the need for explicit educational guidance.

Writer biographies 39

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Australia's teaching workforce

Emeritus Laureate Professor John Hattie
Chair, AITSL Board and author

Delivering a world class education system requires a sustainable, supported and high-status teacher workforce. Emeritus Laureate Professor John Hattie explains the underlying need for comprehensive, nationally consistent data about the teacher workforce to understand teacher supply and build evidence-informed responses.

Australia's shared vision under the Mparntwe Education Declaration (the Declaration) is to have a world-class education system that supports every student to achieve their potential. The Australian education system is highly diverse, devolved and complex, with teacher workforce management and planning involving multiple interdependent stakeholders. However, numerous policy initiatives and reports have underscored the need for collective action on particular challenges facing Australia's capacity to address critical workforce needs and our ability to respond to the needs of priority population groups of learners (for example, the National Agreement on Closing the Gap, and the Independent Review into Regional, Rural and Remote Education). While challenges are often experienced differently across jurisdictions, collaborative efforts can enable improved sharing of data, evidence, strategies, and effective practice at the national level.

Projections over the next decade highlight a potential shortfall in the number of teaching graduates in the face of growing demand (Australian Bureau of Statistics [ABS], n.d.-a; Australian Institute for Teaching and School Leadership [AITSL], 2019a). Meanwhile, the future of teaching will continue to be affected by evolving in-school and external factors, and ways of working. A comprehensive national picture of the teacher workforce is important for improved understanding of supply trends at the local, regional and national levels, and to inform workforce planning and identify national and local policy responses to emerging workforce issues.

Teacher supply and demand

Our current understanding of teacher supply and demand across the country lacks breadth and detail, including *where* supply and demand are mismatched and in which domain areas. The Australian teacher workforce is widely dispersed across various systems and sectors responsible for the employment of teachers, which has resulted in an unlinked and inconsistent web of data silos that make it difficult to support effective planning for the future of the teaching workforce.

A snapshot of teacher supply and demand across Australian schools

- Available evidence suggests initial teacher education (ITE) completion rates are declining despite increasing commencements in recent years, and the numbers of graduates available to teach in any year has largely plateaued (AITSL, 2019a). In comparison, the population of 3–18-year-olds is projected to grow between 2019 and 2024 (ABS, n.d.-a, n.d.-b).
- National skills shortage data indicate many regional, rural, remote and low socioeconomic status schools have difficulty recruiting teachers with specialisations in science, technology, engineering and mathematics (STEM) and languages other than English (LOTE) subjects, and struggle to deliver education in specialist settings (Department of Education, Skills and Employment 2018a, 2018b). While Australian reporting on the issue is inconsistent and relies on small samples, data from the OECD Teaching and Learning International Survey (TALIS) highlights that unmet demand more heavily affects schools in non-metro and disadvantaged areas (Department of Employment, Skills, Small and Family Business, 2019).

Modelling student and population trends at national and local levels will help to improve our understanding of teacher demand in local and interconnected labour markets. A national view of ITE trends such as commencement and completion, linked to national teacher workforce trends, including career movement, progression and attrition, will help to formulate a more comprehensive approach to teacher supply to meet demand. The Australian Teacher Workforce Data (ATWD) initiative links ITE and teacher workforce data to provide a national picture of teacher supply. It is an important national step in addressing critical gaps in our understanding and could be the foundation for the establishment of a national teacher labour market model.

YouTube video: 'ATWD Overview' by AITSL [2:31 minutes]

Diversity in the student population and teaching workforce

Australia's student cohort is culturally and linguistically diverse. Research has shown that students benefit from a diverse teacher workforce who can practice, model and encourage cultural responsiveness in schools (Buckskin, 2016; AITSL, 2016a). However, existing data demonstrate a discrepancy in representation. For example, the number of ITE students who identify as Aboriginal and Torres Strait Islander, and the number of primary and secondary teachers who speak a language other than English at home, are proportionately lower than the respective proportion of school children and the broader Australian population (AITSL, 2016a).

Research has also shown that 'hard to staff' schools (that is, those that are remote or regional and those that have students experiencing educational disadvantage)

face greater complexities and challenges in teacher recruitment and retention (Rice et al., 2017). Previous attempts to address recruitment and retention issues in hard to staff schools have primarily focused on two avenues (Lonsdale & Ingvarson, 2003; Halsey, 2018): targeted financial incentives and programs aimed at diversifying pathways to the profession, such as Teach For Australia and Grow Our Own. While research indicates some successes from these programs, further longitudinal data collection is necessary to develop a more thorough understanding of what might be effective.

School culture and perceptions of teacher wellbeing contribute to the attraction, retention and efficacy of new teachers, as well as experienced teachers and school leaders ...

However, more data is needed to develop a detailed understanding of effective evidence-based practice for improving the workforce experiences and wellbeing of the teaching profession

An increasingly diverse and culturally responsive teacher workforce, prepared for the challenges of teaching into the future, is a crucial step towards addressing achievement gaps across Australia's student communities and the goals of the Declaration. Diversity, inclusion, and workforce development strategies should consider the variables that attract individuals into the teacher workforce and employ targeted initiatives to address gaps in the composition of the teacher workforce, including subject specialisations, field of education, and cultural and linguistic diversity.

Supporting new teachers

Teacher supply is driven by the pipeline of new teachers from ITE and alternative pathways into teaching. It is therefore important to support early career and graduate teachers as they enter the profession to improve teacher retention in early career and support classroom readiness. While attrition can occur at any career stage, concerns persist around early career attrition within the first three to five years of teaching. However, there is no robust evidence around teacher attrition in the Australian context and figures vary widely (Weldon, 2018).

Moreover, factors that determine a decision to leave the profession at different phases in the teaching career lifecycle are poorly understood. We need to understand more about the 'tipping points', including the role of workplace culture, casualised or short-term positions (particularly for early career teachers), and the role of professional learning or support, wellbeing, and autonomy. The ATWD initiative is expected to model teacher attrition in the future which will provide additional understanding of this issue and how it can be addressed.

Induction and mentoring processes are among the most significant supports for teachers through their early career stages, especially when processes are classroom-focused and responsive to their needs (Ingersoll, 2012; Kang & Berliner, 2012; AITSL, 2016a; Bennett et al., 2016). However, school leaders report that only 77% of early career teachers on short-term contracts are provided with formal induction practices, and this drops to only 45% of casual relief teachers (AITSL, 2016b, 2019b). This has negative consequences on long-term workforce security and student outcomes. Providing teachers at all career stages and school leaders with opportunities for high quality professional learning and targeted mentoring initiatives is essential to supporting teacher development, satisfaction, and retention.

Educator wellbeing

School culture and perceptions of teacher wellbeing contribute to the attraction, retention and efficacy of new teachers, as well as experienced teachers and school leaders. Consultations across the teaching profession have found the factors that impact on wellbeing and school culture vary across jurisdictions and sectors. We know that providing teachers and school leaders with access to health and wellbeing initiatives contributes to teacher development and retention (Heffernan et al., 2019). However, more data is needed to develop a detailed understanding of effective evidence-based practice for improving the workforce experiences and wellbeing of the teaching profession across the country.

Wellbeing is a significant issue for specific cohorts of educators, including Aboriginal and Torres Strait Islander educators. Addressing this requires greater recognition of their strengths and contributions. AITSL's ongoing work in supporting a culturally competent teaching workforce will help all teachers to improve or enhance their pedagogical practice in culturally responsive ways and create culturally safe environments for their Aboriginal and Torres Strait Islander students and colleagues (AITSL, 2020).

A national teacher workforce

There is an urgent need to understand future opportunities, challenges and implications for identifying, preparing and supporting educators of the future. This will require national future-focused planning of the teacher workforce, that takes into account pedagogical, technological, economic and social change, and the impacts of the COVID-19 pandemic on the work and the role of teachers. It should also involve the development of an increasingly diverse teaching population, pursuit of consistently high professional status for teachers and school leaders, and ongoing strengthening of teacher preparation.

Nationally consistent, longitudinal and comprehensive data are critical to understanding the nature and trend of supply and demand in the teacher workforce. A more comprehensive national picture of the profession and teaching career lifecycle will help to support jurisdictional workforce planning, enable sharing of best practice in addressing areas of national priority, and assist in determining national collaborative efforts.

The ATWD initiative will help address gaps in currently available data and evidence, such as deeper analysis of the ITE supply pipeline, improved understanding of the profile and demographics of Australian teachers including insight into the transition between ITE and teaching, and analysis of local and national supply trends in specialties and subjects over time.

We have an important opportunity to work together to achieve our shared vision of an equitable and world class education system; to build national data and evidence-informed responses, building on achievements across systems and sectors; and to support, plan and elevate the professional status of teachers and equip them for the future.

Note

This article is based on Teaching Futures (PDF 4.65 MB), a paper developed and published by AITSL in June 2021. The paper brings together insights from national consultation, data and evidence to highlight critical influences in the teacher labour market. This work highlights opportunities for nationally consistent efforts to develop a more comprehensive and nuanced understanding of supply and demand in the teacher workforce.

You can read more about the Australian Teacher Workforce Data initiative on the AITSL website.

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How to make reports easier and save K–6 teachers' time

James Hoffman
Primary Curriculum Team leader,
NSW Department of Education

James Hoffman suggests ways K–6 teachers can be more efficient and effective when writing reports for their students.

Reports are regarded as a valuable tool for parents and carers. They show how their child is progressing in the classroom, which areas they need to focus on and what's going well. While reporting is an important part of the teaching and learning cycle, it is one of many tasks teachers do. There are ways that teachers can save time in writing reports while maintaining the quality of information they provide parents and carers.

This article explores the purpose of reporting to parents in NSW public schools and shares the main challenges encountered by K-6 teachers and leaders. It focuses on debunking some longstanding myths, time-saving tips, and the role of quality assessment in writing better reports.

Why do Australian teachers need to write reports?

The Australian Education Act (2013) outlines how schools receive Commonwealth funding and how to spend the funding appropriately. The funding is conditional on implementing nationally agreed policy initiatives. This means that educational authorities must comply with the regulation to continue receiving funding. This legislation on student reports applies to all Australian schools, across states and sectors.

The Australian Education Regulation (2013; Figure 1) details how the Act is applied. It includes a section on student reports that covers what they should contain.

Understanding the NSW context

In NSW, syllabus outcomes are the key reference points for decisions about student learning, progress and achievement. Syllabus outcomes are used by schools to report student progress and achievement during and at the end of a stage.

The NSW Education Standards Authority (NESA), provides information about awarding grades and the common grade scale:

- **A standards-referenced approach is used to report student achievement in NSW. Achievement standards are based on what students are expected to learn and how well they have achieved.**
- **The NSW syllabuses state the intended learning for students by the end of each stage. A to E grade scales describe how well students have achieved. Teachers make professional on-balance judgements to decide which grade description best matches the standards their students have achieved at a particular point-in-time. These decisions are based on evidence of achievement and information teachers have collected during the teaching and learning.**

Subdivision G — Reports to persons responsible for students at a school

59 Student reports

(1) For paragraph 77(2)(f) of the Act, an approved authority for a school must provide a report to each person responsible for each student at the school in accordance with this section.

(2) A report must be readily understandable to a person responsible for a student at the school.

(3) A report must be given to each person responsible for the student at least twice a year.

(4) For a student who is in any of years 1 to 10, the report must:

(a) give an accurate and objective assessment of the student's progress and achievement, including an assessment of the student's achievement:

(i) against any available national standards; and

(ii) relative to the performance of the student's peer group; and

(iii) reported as A, B, C, D or E (or on an equivalent 5 point scale) for each subject studied, clearly defined against specific learning standards; or

(b) contain the information that the Minister determines is equivalent to the information in paragraph (a).

Note: An approved authority for a school may have obligations under the *Privacy Act 1988* in providing information.

(5) For paragraph (4)(b), the Minister may, in writing, determine information that the Minister considers is equivalent to the information in paragraph (4)(a).

Figure 1: Australian Education Regulation (2013)

The NSW Department of Education provides further support to government schools through its Curriculum planning and programming, assessing and reporting to parents K-12 policy and policy standards. Together these documents outline requirements for reporting to parents in NSW public schools. Many schools use this information to develop their own school-based policy and procedures for reporting in consultation with the local school community.

Teachers and school leaders need to understand this legislation, policy and the shared expectations held by their school community before writing reports. Simple errors may lead to confusion, unnecessary duplication or necessitate modifications to meet requirements.

The true cost of report writing – teacher time

Teachers have an acute understanding of the impact of report writing and the inherent challenges. Let's break down the time it takes for primary teachers to write reports.

For a class of 25, each student requires a separate comment for:

- creative arts
- English
- human society and its environment (HSIE)
- mathematics
- personal development, health and physical activity (PDHPE)
- science and technology.

Additionally, most schools choose to add a general comment at the end of the report to describe overall student progress and/or disposition towards learning. This equates to 7 comments per student or 175 comments for the whole class. On an individual level, this works out to be over 2 hours of teacher time to write a report for a single student.

While these estimates are generous, they do not take into consideration additional time for formatting; proofreading and editing; approvals; signing; and distribution to parents and carers.

Some schools provide a day of release from face-to-face teaching for report writing. Even with this windfall, teachers are still required to find the remaining time to complete reports, often outside of school hours.

Digital approaches to reporting

In their review of student reporting in Australia, Hollingsworth, Heard, & Weldon (2019) provide an overview of the recent uptake of electronic tools and platforms used by schools to improve reporting. They observe that the twice-yearly report to parents is changing.

In place of detailed teacher comments and information about a student's performance, many schools are now publishing more succinct, auto-generated transcripts which can be little more than graphs, Likert scales and grades without any written feedback or teacher comments.

Electronic records allow schools to centralise much of their administration, record-keeping, assessment data and communication. Some platforms include the capacity to generate semester reports by collating and aggregating learning data, grades and feedback comments stored in a teacher's electronic mark book. Some educational jurisdictions in Australia provide a system-wide, online parent portal for schools. In other jurisdictions, many teachers have found digital solutions offer more ways for them to engage with their reports.

This time saving trend towards shorter documents may be explained as an increasing preference for continuous online reporting functionality offered by new systems.

Continuous online reporting

The most recent move by some schools towards continuous online reporting means parents receive updates on their child in regular instalments at key points throughout the semester, rather than at the end. As Hollingsworth, et al. (2019) point out, it is often seen as 'too late' for parents and carers to be formally notified of how their child has been performing at the end of a semester. Particularly in the early years of school where student skill development can progress at a rapid pace.

Continuous or progressive reporting aims to provide more frequent and timely communication than end-

of-semester reports. However, questions have been raised as to whether progressive reporting is capable of measuring students' real progress over time, that is, progress that represents a student's learning growth. For example, whether their grades have plateaued, improved, or worsened over time.

Hollingsworth et al. (2019) define progress (gain or growth) as:

- a measure or other indication of the 'learning made'
- the difference between previous and current attainment along a continuum of learning as measured over time
- (may be indicated in terms of) a visual shift in position along a progression
- an increased score in standardised assessment
- (if an expected level of growth can be feasibly determined) descriptions such as 'below', 'at' or 'above' expected growth.

Put simply, progress is how much learning has happened.

Properly understood, learning progress can be defined as the gains, or the increasing proficiency in skills, knowledge and understanding, students make over time in an area of learning (Masters, 2017). Accurate communication of learning progress is an essential part of teachers' professional practice. Indicator 5.5.2 of the Australian Professional Standards for Teachers sets the expectation for teachers to report clearly, accurately and respectfully to students and parents/carers about student achievement, making use of accurate and reliable records.

Determining learning progress relies on teachers' ability to generate evidence from recurrent assessment of skills, knowledge and understandings and then locating where the student is at along a progression of learning. Representing and then communicating this to parents and carers is the skill of reporting.

Teacher comments

Writing teacher comments to describe a student's academic achievement accurately may well be the most time-consuming part of the reporting process.

Teachers need to provide parents with meaningful information about student learning ...

In a blog post titled, A better way to do school reports?, Lovell (2021) provides a bold time saving approach to reports – stop writing subject comments. Lovell articulates 4 broad goals of reporting and discusses how 3 different schools have achieved the same goals without subject comments.

By contrast, teacher comments are often cited as a highly valued aspect of reports by parents (Ridgway & NSW DET, 2006; British Columbia Ministry of Education, 2017; Hollingsworth et al., 2019). They are also valued for their potential to assist parents to provide learning support at home (Dixon, Hawe, & Pearson, 2015).

A greater focus on the quality of teacher comments in providing useful, meaningful information to parent communities has also been suggested by Earp (2016). Earp provides an example of a high school where grades had been removed from A to E reports to give more targeted and useful feedback to students and parents.

Teacher comments are criticised by parents when they are thought to be meaningless, clichéd or formulaic, avoidant, trite or irrelevant (Cuttance & Stokes, 2000; Power & Clark, 2010). Parents are also critical of comments that replicate the technical language of curriculum outcomes (Dixon et al., 2015) and computer-generated comments (Cuttance and Stokes, 2000, Power & Clark, 2010) as both are perceived as being insufficiently personalised or informative.

Where comments are purely descriptive, singularly positive and are not referenced to a standard, parents feel the information is vague as they are unable to 'locate' their child's performance along some measure of quality or against expectations (Harris, 2015; Dixon et al., 2015).

While there are some time-saving benefits to using comment banks, it is also clear that they can be considered problematic for parents and carers. This point is illustrated beautifully in Tom Sullivan on the problem with report cards – a YouTube video (2009) that highlights issues with reports in Canada, the case for plain English and the value of teacher comments. Twelve years later the messages in this video are still relevant.

Making reports manageable

Striking just the right balance of detail in reports is not easy. Teachers need to provide parents with meaningful information about student learning and complying with legislative requirements and system policy expectations while managing a number of other tasks. A further layer of complexity for teachers that move between schools is that reporting practices can vary.

Let's get started with some time-saving tips and slice through some of those reporting myths!

Three simple things teachers can do are:

1. Find out exactly what the reporting expectations are for your school
2. Devote time to quality assessment practices and processes
3. Learn from examples of how other schools have done it well.

A summary of expectations for NSW public schools

Here is a basic list of expectations (adapted from the department's policy standards) that you can use to quickly evaluate your own reports to see if they meet expectations.

- **Written in 'plain English' and easy to understand**
- **Compares the student's achievement in each key learning area against state-wide syllabus standards using a five-point scale (A–E or equivalent)**
- **Includes teacher comments for each key learning area**
- **Comments identify areas of student strength and areas for further development**
- **Professional and constructive – shows student progress and what students are able to do**
- **Focussed on key aspects (those parts of achievement that are most important)**
- **Includes social as well as academic information and information about attendance**

YouTube video: 'Tom Sullivan on the problem with report cards' by tvoParents.com [8:06 minutes]

What are state-wide 'syllabus standards'?

Achievement standards have two important components. These can be thought of in terms of:

- what (students are expected to learn)
- how well (students have achieved).

'What' students are expected to learn is described by the NSW syllabuses. The components that contribute to teachers' understandings of state-wide standards include:

- objectives
- stage statements (or foundation statements for creative arts)
- outcomes
- content points (or indicators for creative arts).

The five-point scale (A to E) then describes 'how well' students have achieved. Grades are given for individual achievement (A to E) which summarise 'how well' the students' work demonstrates the standard (Figure 2).

Accurate reporting requires teachers to use professional judgement in relation to standards – a highly important aspect of teachers' professional practice. These decisions are based on evidence of achievement and information teachers have collected during teaching and learning.

Awarding grades

For NSW public schools, grades are reported for students in Years 1 to 10 using the five-point scale while Kindergarten

Describe this achievement level	Using this word	And/or this letter
The student has an extensive knowledge and understanding of the content and can readily apply this knowledge. In addition, the student has achieved a high level of competence in the processes and skills and can apply these skills to new situations.	Outstanding	A
The student has a thorough knowledge and understanding of the content and a high level of competence in the processes and skills. In addition, the student is able to apply this knowledge and these skills to most situations.	High	B
The student has a sound knowledge and understanding of the main areas of content and has achieved an adequate level of competence in the processes and skills.	Sound	C
The student has a basic knowledge and understanding of the content and has achieved a basic level of competence in the processes and skills.	Basic	D
The student has an elementary knowledge and understanding in few areas of the content and has achieved very limited competence in some of the processes and skills.	Limited	E

Figure 2: Five-point scale for reporting student achievement to parents/carers (NSW Department of Education, 2021)

students receive a comment only (NSW Department of Education, 2021). One myth that causes much confusion is that teachers must never award an 'A' unless a student is operating 2 years above year level or stage expectations. This is just categorically incorrect!

Teachers are not limited in any way to set numbers of grades within their class or school. Grades are awarded for individual achievement in line with the standards-referenced approach used in NSW (NSW Education Standards Authority (NESA), n.d.-a). Grades are awarded to students based on achievement, not effort or behaviour.

It is possible that there are classes in which all students demonstrate 'extensive or thorough knowledge and understanding of syllabus content', and show 'very high or high levels of competence in processes and skills'. In these instances, only A and B grades are awarded. Alternatively, there may be some groups or classes in which no students demonstrate achievement to this standard in which case the highest grade awarded may be a C. It is important to remember that students awarded a C grade are meeting the state-wide standard.

Teachers should not award lower grades to students in the lower year in a stage, for example, a student in Year 3 should not be limited to a D or C purely because they are at the beginning of a stage (NSW Education Standards Authority (NESA), n.d.-a). Decisions are made based on student achievement of the learning in which they have participated up to that point in time.

An E grade would be awarded to students who have demonstrated 'an elementary knowledge and understanding in few areas of syllabus content' and have achieved 'very limited competence in some of the processes and skills'.

An on-balance judgement about grades for end of semester reports cannot be made based on a single piece of work. Teachers need to weigh up the assessment information collected for a student up to that point in time.

Teachers can build their consistency of judgement when awarding grades through school-based moderation processes. This ensures grades awarded are consistent with the published standards. The grade a student receives in one school can be compared to the same grade anywhere in NSW. A 'B' at Bourke Public School is the same as a 'B' at Bourke Street Public School!

Using student work samples is a fantastic way for teachers to strengthen their understanding of standards. Both NESA and ACARA provide work samples aligned to A to E grades.

Leveraging both formative and summative assessment

Today's educators are immersed in an environment in which assessment is a constant topic of discussion and debate. Lucariello, et al. (2016) outline the behavioural research base for psychology's top 20 principles for enhancing teaching. Principle 18 states that formative and summative assessments are both useful, but they require different approaches (Lucariello, et al., 2016):

- **Formative assessments are used to guide instruction in the classroom.**
- **Summative assessments produce an overall judgment about student learning or the effectiveness of educational programs.**

Formative assessments are carried out during instruction and are aimed at improving learning in the immediate setting. Summative assessments measure learning at a given point in time, usually at the end of some period of instruction. It is very challenging to award a grade for end of semester reports without having evaluated student learning through any form of summative assessment.

To avoid increased workload where last-minute assessment tasks are issued to students to report on student learning, leverage summative assessment by strategically planning opportunities across the course of the semester throughout the teaching and learning cycle. These assessments need to take place alongside a range of formative assessment tasks. There must be a harmonious balance between the two – not just all formative or all summative.

School-based assessment tasks collaboratively developed by teachers have immense value when designed well. However, many teachers doubt their own ability to develop summative tasks with explicit quality criteria linked to syllabus standards. Clear standards exist for judging the quality of assessment (NSW Department of Education and Training, Ladwig, & Gore, 2006) and teachers should be confident in their own professional ability to design quality, school-based tasks.

The tick-and-flick approach to reporting

One approach to reporting that can be problematic is the tick-and-flick approach. It 'replaces' teacher comments with learning statements which means that reports are no longer compliant with legislative and policy requirements.

There can be a high degree of variability in how the 'learning statements' are developed. Sometimes they consist of content points copy-and-pasted directly from the syllabus. In a bid to avoid use of jargon, sometimes these statements are written in 'parent friendly' language. This may erode the original intent and not accurately reflect the state-wide standard set by the syllabuses.

The tick-and-flick approach can add meaningful information to reports when:

- developed carefully to meet compliance requirements
- state-wide standards are accurately articulated
- involve parents/carers in their design.

Use of the tick-an-flick approach should be avoided where any one of these 3 indicators of success are not met.

The power of plain English

The NSW Government through its digital.nsw website, defines plain English as direct, everyday language. We need to write in a way that all parents and carers can understand - regardless of ability, age, language and location.

People prefer plain English, even experts. Loranger (2017) explains the misconceived notion that long sentences and big words to make you sound more professional results in great sacrifices to readability and credibility.

Writing in plain English allows for:

- succinct and efficient communication so readers understand the message quickly, without having to decipher complicated sentences or vague jargon
- a greater number of people to understand the information
- easier translation into other languages.

Learn more about clear language and writing style on the Australian Government's style manual webpage.

A style guide saves precious time for editing and proofreading reports ….

Use a style guide for a consistent, school-wide approach

A style guide outlines a shared set of standards for writing, editing, formatting and designing reports. Using a style guide helps the whole school to present itself professionally and cohesively while ensuring consistency of voice with comments written by multiple staff.

For example, is it:

- stage one or Stage 1
- year level or Year level
- grade or achievement rating
- Mathematics or mathematics
- co-curricular or extra-curricular
- learning from home or remote learning
- special needs or additional learning needs
- Semester Two or semester 2?

A style guide saves precious time for editing and proofreading reports before they are signed and distributed to parents and carers. As well as helping to eliminate errors and style inconsistencies, the style guide supports teachers with the school's expectations from the outset.

Try using the NSW Department of Education's content style guide if your school doesn't have one.

Don't shy away from providing feedback on areas for further development

While it's important for teacher comments to be constructive and positively framed, comments should also be reflective of the grade awarded and highlight areas for further development. For example, a student awarded a D grading should have an accompanying teacher comment that:

- explains what the student is able to do
- identifies for parents where and why difficulties are being experienced
- emphasises opportunities to improve.

Tips from experienced teachers

This list of 'tried and trusted' reporting tips has been collated from experienced teachers across NSW. I'd also like to hear what strategies are effective for you and your school. Please don't hesitate in contacting me to share your time-saving ideas.

- **Remember that parents and carers are the prime audience of reports.**
- **Hold community focus groups to identify exactly what parents and carers value about reports. Hand out anonymous samples of reports and ask for feedback.**
- **Where possible, work with colleagues teaching the same year level or stage to moderate student work samples to build a shared understanding of the expected standard of work.**
- **Plan out your time for writing teacher comments and get into a 'flow'. Some teachers like to work KLA by KLA while others prefer to write student by student.**
- **Remember that reports are not the only opportunity to share information about student learning and achievement. Parent/teacher interviews, phone calls, emails, information conversations and digital platforms with videos of children showing what they can do all provide parents with meaningful information about their child's learning.**
- **Focus on the most important aspects of teaching and learning. You can't report on a whole syllabus in one report.**
- **Use stage statements to help structure comments.**
- **Keep a list of great work that each student has done and record the reason why linked to outcomes and skills. Add to this list over the semester.**
- **Print a class list from 'Maintain EAL/D' in ERN to quickly identify the EAL/D students in your class and their EAL/D phases, their language background and when they arrived in Australia.**
- **Keep a handy list of cognitive verbs for easy reference when writing comments.**
- **Make an observation template or grid for each semester with all students listed and space to write general observations. Record anything from behaviour, work habits, specific KLA examples and dates. Very helpful in 'individualising' reports.**
- **When writing report comments, don't be frightened to exercise your professional opinion/judgement when describing for parents what would help their child improve.**

Final thoughts

This article has explored the purpose of reporting to parents in NSW public schools and shared the main challenges encountered by K-6 teachers and leaders. It explored strategies for tackling reporting to parents by debunking some longstanding myths and investigated the role of quality assessment in writing better reports.

Primary teachers and school leaders should reflect on their current reporting practices and processes to:

- fully understand the expectations and address any misconceptions
- understand what works for parents and carers
- leverage quality assessment
- identify time saving opportunities afforded through use of digital tools
- identify other opportunities throughout the school year to provide feedback to parents and carers about student progress
- incorporate effective strategies used by other schools.

Reports that meet compliance requirements, are easy to understand and accurately communicate student performance, attainment and progress.

They offer a great deal of value to parents and carers and schools in improving student learning. They are – and continue to be – an important and useful communication tool that provide opportunities for meaningful conversations between teachers and parents about student learning.

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The School Magazine: a quality digital resource

Cheryl Bullow
Publications Officer, The School Magazine

The School Magazine has a long history of publishing innovative, contemporary literature that appeals to students while providing valuable support for teachers in the classroom. In continuing to honour the time-tested philosophy of providing quality texts, The School Magazine now offers a digital world of words, making it even easier to plan and deliver tailored content as part of a literacy program.

The value of digital access

By definition, the word 'magazine' means a storehouse of ideas. The School Magazine's digital platform is just that ... it's a storehouse of material, carefully curated to meet the needs of both teachers and students. The task of finding appropriate and reliable reading material for students has never been easier. A digital subscription to the magazine is a subscription to a library of material aimed at developing literacy, language and literature.

Not only does it entitle the user to view electronic versions of all four magazines, it also gives them access to every individual piece of text that has been published since 2019. Along with this extensive library of content, a digital subscription also provides access to carefully-crafted learning resources, audio support, interactive content and much more. It's an evolving resource, growing to meet the needs of today's learners.

Collating content

With access to all published content, across the 4 levels of the magazine, teachers can collate content at the click of a button. For example, if a user wanted to search for science fiction pieces, they could conduct a search across all 4 levels and across all text types. This would bring up a selection of science fiction pieces from Countdown, Blast Off, Orbit and Touchdown (Figure 1).

Analysing the way in which authors write for different audiences and for different purposes is a key component to reading critically. Having access to a repository of texts allows teachers to search for particular authors and showcase the fact that authors write across genres, text types and ages (Figure 2). This ability to collate content is an excellent support for classes conducting author and illustrator studies.

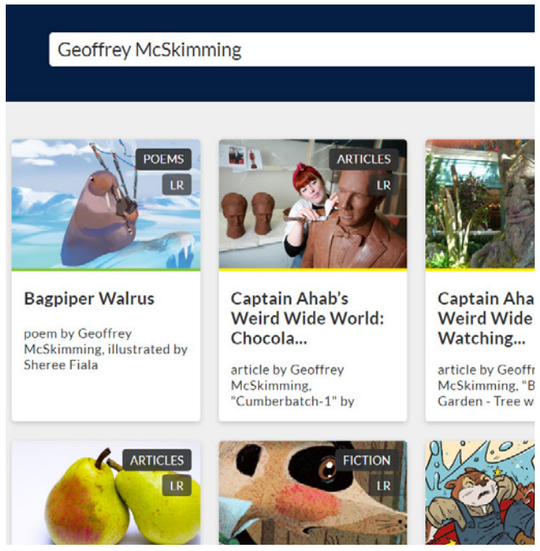

Figure 2: The repository of texts can be searched by author or illustrator

Student access

The 'Activity' feature of the website allows teachers to save collated content for students, whether it be for a whole class, a small group or an individual. Rather than expecting students to navigate the extensive library of content, teachers are able to tailor content as part of their literacy program. Activity containers act as folders – somewhere for pieces of text to sit. Once a folder is populated with the desired texts, a link is generated and provided to students, as in this example. This ensures that students are directed to the texts that have been specifically chosen for them.

With access to all four levels of the magazines, teachers are able to cater for different reading levels within the classroom. One group of students may be given a link to a folder filled with Countdown texts, while another group may be accessing texts at an Orbit level. The School Magazine's digital delivery is all about flexibility.

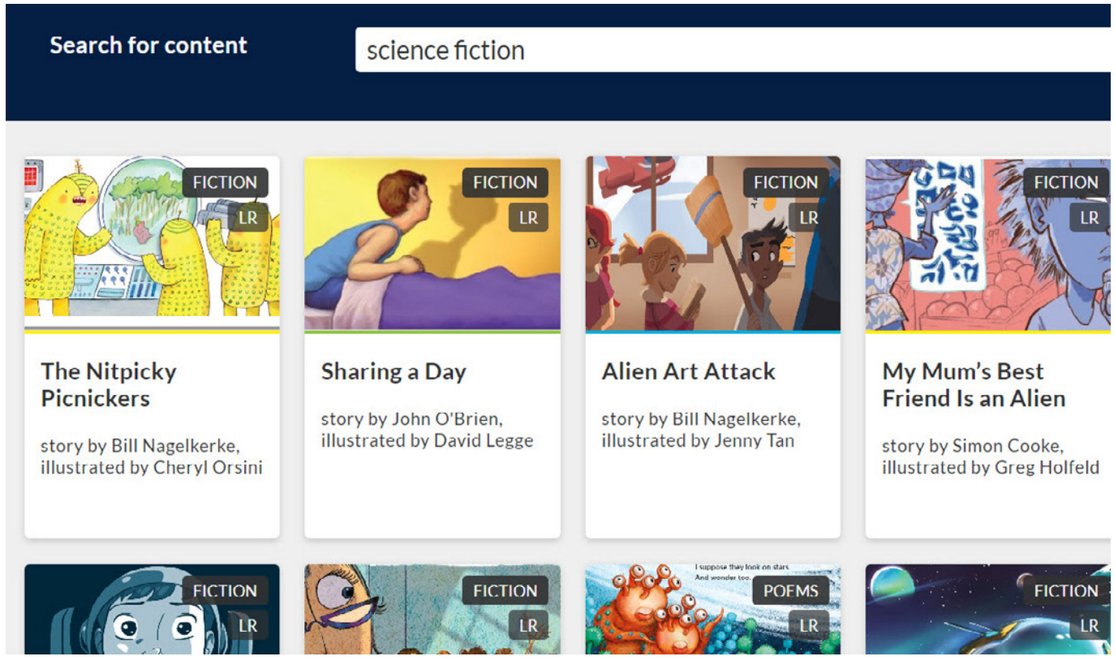

Figure 1: A search for 'science fiction' produces results from all 4 levels of the magazine

Learning resources

The School Magazine learning resources are designed to provide higher order thinking strategies. Each piece of content within the magazine is accompanied by teaching notes to further extend that piece of writing. A digital subscription provides access to an online version of both past and current learning resources. These resources provide clear, concise and innovative ideas for teachers to use with their students. And for those wishing to download and print these notes, this is also an option.

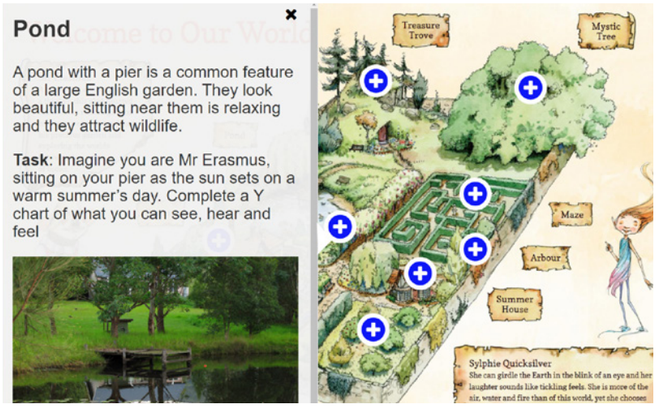

Figure 3: Interactives add further value to texts

Student engagement

Fostering a lifelong love of reading has, and always will be, at the heart of what The School Magazine produces. Moving into digital delivery provides an even greater opportunity to engage with students in a meaningful way.

For many readers, a text becomes more relatable and more accessible when it is read aloud. The youngest level of the magazine – Countdown – has audio recordings to support its online texts. When students click on a story, poem, article or play, they are given the option to have that piece of text read to them. This not only helps with any challenging vocabulary, but it allows the student to hear how intonation, phrasing and fluency can enhance their reading experience.

The magazine takes great pride in offering students rich and well-written poetry each and every month. The poetry, be it humorous, evocative, rhyming or free verse, is always offered in a visually engaging way. Now, with a digital subscription, one poem per magazine is presented as a short filmette. This gives students the opportunity to see poetry being brought to life.

Short filmette: 'An elephant, I heard someone say' by The School Magazine [0:23 minutes, YouTube]

A recent addition to the digital delivery, and one that has endless possibilities, is the inclusion of individual interactives. These include drag-and-drop activities and multimodal pieces like the one shown in Figure 3. Interactives are designed to add further value to the text and can be completed independently by students.

And, of course, the eMagazine

What would a digital subscription be without the digital magazine itself? Each month, digital subscribers can read stand-alone pieces of text or flip through an electronic version of the magazine (figure 4). Again, access to digital delivery of the magazine is all about choice and flexibility. It's about supporting teachers, encouraging students and providing quality learning opportunities for young people everywhere.

Figure 4: The monthly magazines are available electronically

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PEER REVIEWED RESEARCH

‘Drowning in information while starving for wisdom’. Helping students to maximise their online searching

Dr Renee Morrison
Lecturer, University of Tasmania

Dr Renee Morrison presents a detailed analysis on students’ use of ICT as an information search tool and indicates the need for explicit educational guidance and discourse in this activity.

Executive summary

While the use of internet search engines for research has flourished in recent decades, we are still learning about how teachers can best support students in using these tools effectively. Understandably, the Australian Curriculum requires students to become adept at investigating with ICT during their school years. In this paper, Renee Morrison discusses much research, both Australian and international, that suggests many students are poorly informed about the function of search engines. They lack the metalanguage required to discuss their engagement with internet search and rarely adopt a proactive role in their search for information, often limiting the resultant educational benefits. She argues that passive involvement is of concern for a number of reasons, including the commercially driven bias of search engines such as Google; the dispersal of misinformation; and users’ predilection to believe that search engines are an indisputable fount of knowledge.

The article includes the review of a comprehensive range of research regarding a ‘search skill deficit’ amongst school students and regarding the relationship between language (or discourse) and online search. In addition, Morrison’s own studies confirm a need for concern about the ways students engage with search engines. She claims that a greater understanding of the metalanguage relating to internet searching and effective discourse between educators and students about online search activities can cultivate strategies leading to ‘deep-level’ search practices.

By using the analogy of driving a car, Morrison asserts that students should be encouraged to play an active role when searching, and ‘drive’ their search engine. She suggests that teachers can better cultivate effective use of online search tools by:

- modelling metalanguage and its use
- modelling critical thinking surrounding online search and its functions
- teaching students to script and rescript appropriate search queries
- explaining the significance of domain extensions such as .com, .edu, .gov and .au
- teaching criteria for evaluating websites.

For those seeking more detail on cultivating effective use of internet search engines, the following article provides a significant selection of research literature. In addition, it recommends the explicit teaching of skills for researching using digital technologies so that students are empowered and become productive users of search engines.

According to the Australian Curriculum, by the end of Year 4, students should be able to ‘use ICT to plan an information search’ (ICT General Capability, ACARA, 2019). This directive reflects an understanding that our manner of accessing information increasingly relies upon digital technologies like search engines. The ability to find, comprehend and evaluate information online has likewise been repeatedly identified by the Organisation for Economic Co-operation and Development (OECD) as crucial to participation in society today (OECD, 2010). While few would debate the enormous educational potential brought about by search engines like Google, a significant body of research suggests that today’s students lack the search skills to make this potential a reality (Argelagós and Pifarré, 2012; Gui and Argentin, 2011; Kammerer and Bohnacker, 2012; Quintana et al., 2012). Such research confirms my own experiences as an educator. For more than 18 years and across three continents, I witnessed firsthand a rhetoric-reality gap, not only between what online search **can** do and **is** doing for education, but between the search skills presumed of our students and those they truly possess.

In Australia, findings from the National Assessment Program – Information and Communication Technology Literacy (NAP-ICTL) assessment revealed just half (52%) of Year 10 students are able to script appropriate queries

when searching for online information (Fraillon et al., 2015). This is important given the many benefits associated with online search. Frequent online searching has been found to provide students with better metacognition (Lee and Wu, 2013) and children who search online, for fun or for schoolwork, perform better in mathematics and reading tests than those who do not (Casey et al., 2012). Benefits beyond school, including in higher education (Weber et al., 2019), are also associated with more 'advanced' online search (van Dijk, 2012). Educators and researchers alike have a vested interest in understanding more about how students search and how to improve their search activities to ensure the new educational benefits available are maximised.

Learning about and with digital technologies is increasingly understood to be a social process involving unique and telling discourses (Davidson, 2014; Eynon and Geniets, 2016; Wegerif and Major, 2019). One research agenda accordingly investigates the links between 'talk' (or discourse) and student digital practices. Some have suggested that imperative to success in many digital tasks is 'the effective use of talk scaffolds' (Major et al., 2018, p 13) and modelling 'equitable kind[s] of debate' (Mercer et al., 2010, p 370). Beyond just achieving greater success with digital tasks, educators who do this are said to experience more positive relationships with students (Bouhnik and Deshen, 2014; Maher, 2012; Major et al., 2018). Educators who forego establishing such discursive practices, by contrast, are more likely to witness unproductive digital activities with little educational benefit experienced by participants (Mercer et al., 2010). In terms of search specifically, preliminary evidence also exists of a relationship between particular types of discursive practice and positive search practices (Castek et al., 2012; Knight and Mercer, 2015). This evidence, along with increased understanding of the many benefits of online search (Casey et al., 2012; Lee and Wu, 2013) and of a search skill deficit in today's students (Argelagós and Pifarré, 2012; Gui and Argentin, 2011; Quintana et al., 2012) make the current study timely. This article reports on the following research questions:

- What types of talk (discursive practices) do students engage in during online search and during discussions of online search? (RQ1) and
- To what extent is this talk associated with search success and new educational benefits? (RQ2).

Research approach

If students can engage in discursive practices known to be correlated with search success, better learning contexts and new educational benefits can be realised. A desire to contribute an understanding of such discursive practices led to this research employing Critical Discourse Analysis (CDA). The value of CDA in educational research has been established for several decades (Gee, 2004; Luke, 1995; Rogers et al., 2005). Rogers suggests that 'in educational settings, language is the primary mediational tool through which learning occurs' (2004, p 12). Language provides educators and students with a means to share ideas and negotiate action, and language reveals what students understand and assume (Koole, 2015). Language is also a social practice through which individuals establish social identities and interpersonal relationships (Wodak, 1999). It is these language practices specifically, those determined by and determining social structures that CDA scholars are most interested in, and which they consider 'discourse' (Fairclough, 2015).

This research employed Fairclough's (2015) three-tiered model for CDA (see Figure 1). The model identifies any instance of discourse as 'simultaneously a piece of text, an instance of discursive practice and an instance of social practice' (Fairclough, 1993, p 4). Fairclough suggests texts, be they spoken or written, are more than just a collection of linguistic features and can reveal what individuals take for granted, including their knowledges, beliefs, and values. These internalised assumptions are both socially constrained and constitutive, and influence how individuals interpret discursive and social practices, including their own, even unconsciously. Fairclough's model provides researchers with tools to explore how talk is produced, how it is interpreted and the assumptions upon which this interpretation relies, as well as the social conditions making these assumptions available or privileged (Fairclough, 1993). As such, the research presented here is interested not only in how students search and talk about or during search, but in how they **interpret** what it means to search and to talk about search. Given evidence of a search skill deficit in today's students (Argelagós and Pifarré, 2012; Gui and Argentin, 2011; Quintana et al., 2012), one which implies students might interpret online search in limited ways, the research is also interested in identifying the social conditions making these **interpretations** privileged in contemporary educational settings.

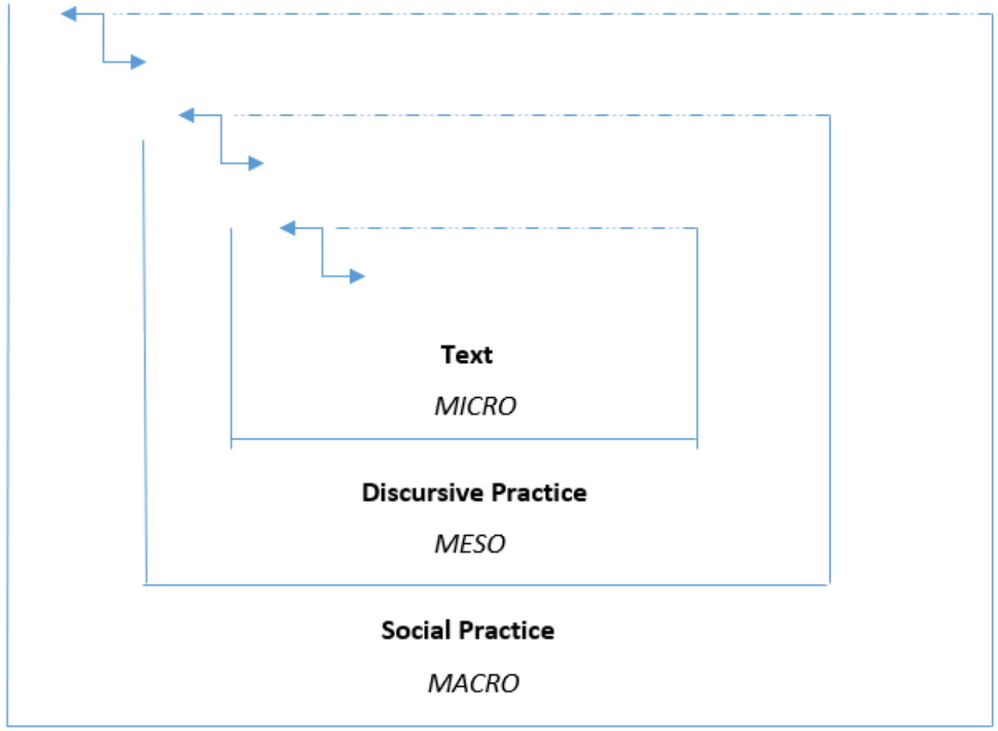

Figure 1: Theoretical and conceptual framework. Adapted from Fairclough (1993, p 73).

Literature review on the benefits of online search

Proposed revisions to the Digital literacy (previously ICT) General Capability of the Australian Curriculum (2021) include increased reference to search engines. This is perhaps not surprising given the inconceivable volume of information and educational resources they make instantly accessible. Indeed, our reliance upon online search now sees Google alone process more than 90,000 searches every second of every day (www.internetlivestats.com). In Australia, children go online both at home and at school more than children from 25 other countries, and the nation's first-time internet users are some of the youngest in the world (Green et al., 2011) and getting younger all the time (Davidson, 2011b; Green and Holloway, 2019). Students in Australia spend more than 11 hours a week online, usage which has doubled since 2008 (Roy Morgan, 2017). Such use is to be encouraged, it seems, with the Australian Government spending more than $2 billion implementing classroom digital technologies in 2014 (Beckman et al., 2014) and a further $53 billion in 2020 to increase the speed of its national broadband network (Lane, 2020, para. 19). Expenditure of this scale further reflects a broad social assumption that internet use is imperative for participating in society today.

Above and beyond the obvious educational benefits of online search, like making information freely available to anyone, anywhere at any time, research has begun to identify further reasons why educators should continue to encourage students use search engines. Lee and Wu's (2013) study of over 80,000 students (aged 15 years) found '[m]ore frequent information-seeking activities predicted better knowledge of metacognitive strategies, which in turn predicted better reading literacy' (p 168). Regarding younger students, Casey et al. (2012) found that certain Internet activities performed by nine-year-olds appeared correlated with educational benefits, while others

appeared detrimental. Online search and email, for example, were 'associated with higher reading and maths test scores' while instant messaging and downloading music were 'negatively associated' with both scores (Casey et al., 2012, p 615). This suggests that not all internet activities are equal. Research has also found that not all online search is equally beneficial. In their examination of German university students' online search, Weber et al. (2019) found that 'using advanced online information seeking strategies [wa]s a significant and robust predictor of better grades' (p 657). These strategies, those they define as 'deep-level', go beyond one-word searches on Google and beyond considering only the first page of results. Better grades, instead appeared correlated with students using complex search strategies, including adapting search terms in response to results and considering only scholarly journals or peer-reviewed information. In adults too, the online reading involved in information seeking has been found to lead to 'increased levels of in-depth reading' (You et al., 2012) while reading online to 'be social' decreased 'in-depth reading' (p 1586). Such findings complement a body of literature (Cho et al., 2003; Zillien and Hargittai, 2009) which reports that those who use the Internet for 'serious applications' are more likely to be highly benefited in terms of capital and resources, in education, social participation, and careers (van Dijk, 2012, p 69).

Problematising the benefit of online search

Although literature investigating online search spans several fields, including information retrieval, human computer interaction and educational technology, consensus is growing that search engine use is complex (Bilal, 2012; Chevalier et al., 2015; Eynon and Geniets, 2016; Foss and Druin, 2014; Knight and Mercer, 2015; Lewandowksi, 2015). Despite this understanding, and despite evidence of a search skill deficit in students particularly, 'very few investigations into children's online search have appeared in the last five years' (Vanderschantz and Hinze, 2019, p 2). Of similar concern is that educators frequently forego explicit search instruction in the classroom (Combes, 2013; Ladbrook and Probert, 2011; Morrison, 2014; Spengler, 2015; Togia et al., 2014). This might reflect what Rieh et al. (2016) describe as a problematic conceptualisation where the relationship between searching and learning, and hence the relationship between search and the benefits of search, have simply been assumed. Such an assumption is reminiscent of wider educational ideologies that consider digital participation invariably beneficial (Literat et al., 2018; Selwyn, 2010).

Rieh et al. (2016) suggest (in line with Caviglia and Delfino, 2016; and Gärdén et al., 2014) that students see search as 'a simple type-and-click operation' and are accustomed to using Google to acquire facts, not to facilitate higher order thinking. These attitudes can prove detrimental.

... researchers warn of the immense influence search engines, particularly Google, have in terms of altering what we know and what knowledge we value ...

Indeed, regarding digital integration in education, attitudes have proven more important than resourcing or even teacher skill for increasing authentic technology-enabled learning (Ertmer and Ottenbreit-Leftwich, 2010). Perhaps this is positive given many studies find that teachers themselves struggle to use online search effectively (Claro et al., 2018; Ekstrand et al., 2020) and struggle to structure (and provide support for) online search tasks for students which go beyond lower-order skills (Claro et al., 2018; Hinostroza et al., 2021). In their study of eighth-grade Finnish students and teachers, Nygård et al., (2020) found that instances during information search where the teachers' role was 'neither functional nor met the learners' needs' created tension in the classroom (p 9).

Other detrimental search habits commonly reported of students, habits likely rendering the benefits of search unattainable, include:

- using natural language queries (Foss and Druin, 2014; Georgas, 2014; Kammerer and Bohnacker, 2012);
- inadvertently clicking on advertisements (Gasser et al., 2012 ; Schultheiß and Lewandwoski, 2019) or anything positioned prominently (Duarte Torres and Weber, 2011); and
- relying on the search engine's placement of results as a measure of relevance (Bilal, 2012; Blikstad-Balas and Hvistendahl, 2013).

Young people frequently click on the first site listed almost automatically (Duarte Torres and Weber, 2011; Gwizdka and Bilal, 2017), enter few websites per topic (Nicholas, 2011) and indiscriminately utilise assistive features like Google's 'Did you mean?' function (Morrison, 2014). Far from demonstrating strong media literacy, that is a literacy said to turn online users from passive humans to active ones (Hashemi and Soltanifar, 2011), such passive practices appear to reflect a belief that the onus is on the search engine not the students when seeking information online (Georgas, 2013). Such faith in search engines not only hinders students from likely developing the vital skills needed to reap the benefits of search but affords immeasurable power to the technology. Indeed, researchers warn of the immense influence search engines, particularly Google, have in terms of altering what we know and what knowledge we value (Goldman, 2011; Hillis et al., 2013; Schroeder, 2014). This influence grows more powerful when search engines are thought of as neutral tools (Schroeder, 2014; Halavais, 2013; Lewandowski, 2015). Far from being neutral, search engines can influence not only how we seek information and the nature of that information, but how we see ourselves and our society (Hillis et al., 2013). In this way, while digital technologies like online search have long been credited with giving students and educators more power, ultimately it might be the commercial juggernauts like Google who benefit the most.

Online search and discourse - maximising the benefits of search

Greater recognition of the potential benefits of online search, and of the potential pitfalls necessitates further understanding of factors likely to improve students' use of search engines. One promising area stems from research investigating the interaction between discourse and digital technology use (Littleton and Mercer, 2013; Major et al., 2018; Mercer et al., 2010; Wegerif, 2013, 2019). Particular attention has begun to be paid to search specifically, and children's talk during search, both in the home and in the classroom.

Danby et al. (2013) utilised conversation analysis to examine a family's talk during online search. The parent in this study, like the teachers discussed earlier, forewent any search instruction and failed to draw attention to the literacies required of online search (as in Plowman, McPake, and Stephen, 2008). In 2011, Davidson also utilised conversation analysis to investigate how four families' collaboratively search in the home. Here too, it was found that Google search and the associated 'sense-making practices' were social and mutual accomplishments 'requiring more than the mere exchange of information' (Davidson, 2011, p 18). These accomplishments were not without criticism however, and included for example, children immediately choosing the first SERP (search engine results page) result. In classrooms, a relationship has similarly been found between more and less productive collaborative online searching and certain discursive practices. Castek et al. (2012) found that students who make equal contributions to the dialogue, who express their own ideas but also build on one another's and share responsibility for search collaborate more effectively. Less productive collaboration, by contrast, is marked by a lack of active listening, by the disproportionate voicing of one's own ideas and discourse 'marked by disconnected contributions' (p 488). Knight and Mercer's (2015) study into the collaborative nature of online search among 11 and 12 year olds also reports that particular discursive practices can help predict positive search experiences. They found 'the most successful pupils were those who engaged in the most exploratory talk', that is, talk where speakers 'engage critically but constructively with each other's ideas', where 'joint consideration' is given to opinions and suggestions before decisions are made, and where 'all actively participate' (Knight and Mercer, 2015, p 310).

Though to date, no research can be found that uses CDA to investigate online search and none can be found which considers both home and school-based search, the literature reviewed here helps to inform the current study. Some of the more influential findings include the following:

- that digital devices can alter the social and learning relationships available in education (Theobald et al., 2016);
- that parents take for granted their child/ren's technological proficiency (Danby et al., 2013); and
- that the 'potential of collaboration and discourse should be exploited in search-based tasks' (Knight and Mercer, 2015, p 303).

Research context and participants

The data presented here comes from two separate studies. The first was a mixed methods study conducted in 2014 by the author (Morrison, 2014). It investigated the extent to which exposing young adolescents to explicit search engine skills affected their online searching and incorporated two phases. The second phase, that which this article reports partial findings from, had five participants, all grade 8 students (three boys and two girls aged 12–13 years) attending a co-educational, government secondary school in regional Queensland. Participants in this study (Study 1), completed a search proficiency pre-test (in pairs) and individual pre-interview before participating in an intervention based upon explicit search instruction. Post-tests, paired and individual interviews, were then conducted.

The second study (Study 2) also focused upon search engine use. It explored online search in Australian home-schools and included both parent-educator (n=5) and student (aged 8-10 years) participants (n=7). More specifically, the study explored the value of the 'Generational Digital Divide' construct in helping understand home-schoolers' online search and associated discursive practices. A mixed methods research design was again adopted, incorporating two data collection phases. In the first phase, 60 Australian parent-educators were surveyed regarding their beliefs about, and use of, internet and search technology. The first phase is not reported upon here (see Morrison, 2020). In the second phase, members of five home-schooling families were observed using a search engine, had their (individual) search proficiency tested and were individually interviewed on their use of and beliefs about online search.

In both studies, video and screen capture footage assisted in the collection of the following quantitative data when participants were searching:

- counts of the query types utilised;
- counts of websites visited per topic;
- time spent on (and practices on) the SERP;
- time spent on relevant versus irrelevant websites (irrelevant sites were those deemed: to contain incorrect or misleading information; to contain unrelated information; unable to answer the item's question);
- percentages of successful versus unsuccessful searches;
- time spent on successful versus unsuccessful searches; and
- scores for self-reported knowledge of search metalanguage.

A scoring system was also developed for the search proficiency test in Study 2 where possible scores were guided by an item's designated level of difficulty. The quantitative data outlined here assist primarily in answering RQ2 regarding search success and any associated new educational benefits.

Participant discourse during the tests (study 1), observations (study 2) and interviews (study 1 and 2) make up the qualitative data for this research and assist in addressing RQ1. Audio recordings during each item were transcribed verbatim. Transcripts were then analysed using a system guided by Fairclough's (2015) three-tiered model for CDA. As established, (see Figure 1) Fairclough identifies any instance of discourse as 'simultaneously a piece of text, an instance of discursive practice and an instance of social practice' (Fairclough, 1993, p 4), requiring three corresponding levels of analysis: the micro, meso and macro. In the first (micro) level of analysis, each text was treated independently, as purely an utterance used to communicate. At the meso level, texts were treated as evidence of broader discursive practice. At the macro level texts were treated as social practices, reflecting wider social ideologies. Put simply, the micro level helps to identify how participants talk about or during search; the meso level helps to identify how they **interpret** what it means to search and to talk about search; and the macro level analysis helps to identify the social conditions making these interpretations privileged in contemporary educational settings.

Research findings

Each study contributed significant new understandings regarding the way Australian students use online search in their education and the ways in which they talk about online search. This article presents just three insights from a wide array of findings. These were chosen based on two considerations: 1) the (search or discursive) practices were prevalent across both studies; and 2) the practices typically appeared to be subconscious. A key focus for CDA is exposing and denaturalising the internalised assumptions that individuals take for granted, and which influence how they interpret discursive and social practices, including for example, online search. This section will first present two insights regarding the students' discursive practices (RQ1) before an insight regarding their search practices (RQ2) is highlighted.

Students … clearly lacked understanding (or use) of some standard terminology that could assist them in discussing search.

Students could develop a stronger 'search' metalanguage

Metalanguage is used here to describe the terminology typically employed when discussing one particular activity or topic. Just as 'low pressure system' and 'forecast' could be said to belong to a *weather* metalanguage, the terms 'query', 'URL' and 'SERP' belong to a search metalanguage. Scores of terms associated with online search now exist, but many are highly technical ('inbound link', 'proximity search', 'term vectors') and their use is not expected of students, nor even of teachers. Notwithstanding, students from both studies (and some parent-educators) clearly lacked understanding (or use) of some standard terminology that could assist them in discussing search.

Upon being asked to describe what a search engine is, one student (from Study 1) explains, 'Just a thing that can give you links to other things'. Another responds, 'What you type in on the internet to find a certain web page'. Students similarly gave overly simplistic descriptions when asked about a search engine's role, responding with comments such as, '… to show the thing you mentioned – that was asked for' and '… to give you some information on how to do stuff'. The discursive practices of the older students from study 2 (those being home-schooled) also revealed a lack of helpful search metalanguage. Phrases like, 'I do the little star because it's quicker', were commonly used by student interviewees when shown footage from their previously-sat search proficiency test. Other examples from study 2 include: 'You said, if you put a little mark on it or the little things … it will make a thing different', and 'I can't remember what I did, but I didn't put the proper punctuation in and it did something else'.

In their introduction to 'Digital Literacies', Lankshear and Knobel (2008) suggest that a 'truly literate individual is able not only to use language but to understand how it works' including the genre's associated codes and conventions. They explain 'in the case of the web, for example, this would include understanding how sites are designed and structured and the rhetorical functions of links between sites' (p 79). Such literacy appeared to be underdeveloped in the student participants from both studies. Of interest was that students appeared aware and honest about this potential shortfall. In both study 1 and study 2 participants ranked their knowledge of a range of search terms from (1) 'no knowledge' to (4) 'good knowledge'. On this item, the older home-schooled students (from study 2) performed better than expected given their observed discursive practices. Out of a possible 76 points, students self-reported knowledge equating to between 39 (51%) and 59 (77%) points. In study 1, however, there was not one term where more than 40% of respondents claimed to have 'good knowledge'.

Students perceive their role as passive when searching

Students from both studies engaged in discursive practices representing searchers as passive and subordinate to the 'all-powerful' search engine. Both during and when discussing search, participant discourse revealed a conceptualised hierarchy where search engines like Google have status above them and any who use them.

This presented in several ways. In their pre-interviews, several students (study 1) explained that they would turn to Google itself, not a teacher, friend or parent, (as in Oliveira and Greenidge, 2020) when troubleshooting problems with online search. Students frequently also expressed a false confidence in the exhaustive nature of a search engine's reach, several suggesting that if the required information is not available on a single search engine, it does not exist or is information 'no one know[s]'. Information that is displayed, by contrast, is accepted uncritically. In study 1, two groups were observed accepting answers they clearly doubted. One boy says. 'I don't know, I'm just gonna go with it', before copying down an incorrect answer. Another notices some profound (later confirmed) errors on a web page, and states, 'Okay. I'm not getting this', but continues to use that page for her answer. In this way, the students trust Google's interpretation of their informational needs, and of the information itself, over even their own.

Of interest is that students appear to recognise, albeit unconsciously, this passive view of searchers. In study 1 student interviewees were asked to choose one of two simplified and stylised images (Figure 2) to represent their interaction with a computer during various scenarios. Both images contain a human, an arrow, and a computer. Drawing A represents the computer directing the interaction and a 'passive' user. Drawing B represents the human directing the interaction, an 'active' user. As previously reported (Morrison and Barton, 2018), when the scenario related to manipulating hardware, for instance installing a printer or adjusting volume, most students chose Drawing B, representing an active user. Similarly, students chose the 'active user' more often than not when describing using Facebook or YouTube to search. However, when the scenario involves online search using Google most students selected the more passive Drawing A. Also there was little 'shift', in the selections made by students, on a similar question post the intervention.

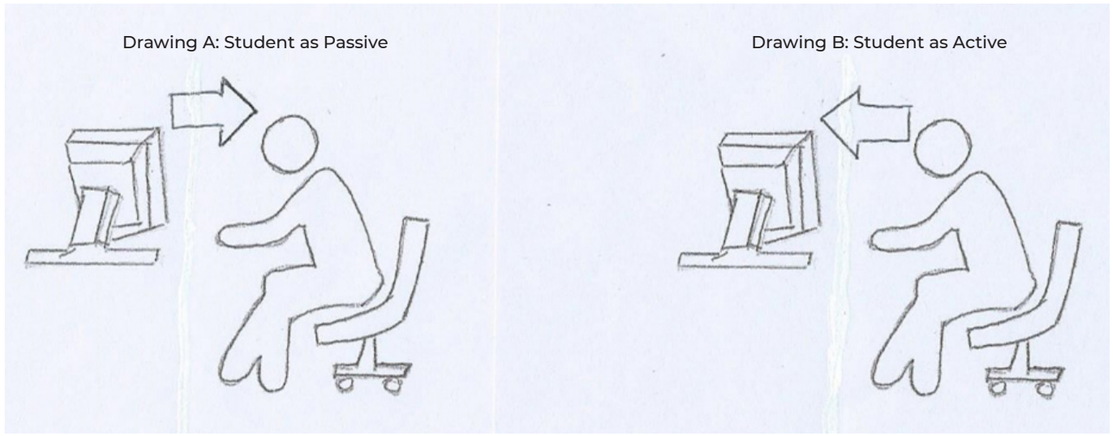

Figure 2

Participant discourse also afforded Google power in other ways. Several discursive practices appeared to absolve the search engine's responsibility for problematic search experiences. When shown footage of their proficiency tests, undesirable responses from Google were commonly justified by students (study 2) with reference to a presumed mistake on their behalf. When the search appeared to perform slowly during one recording (a slowness in fact caused by the screen-capture software) a student explains, 'That could be partly me'. Others immediately presumed that they made a spelling mistake if Google did not return the results sought. That users were responsible for negative search experiences in this way was also apparent in the post-interviews of study 1. Every student made at least one reference to their partner being responsible for certain detrimental search practices. Comments like, 'I think that was Mike', 'Liam told me to', and 'Rhegan talked me into it' were evident in all transcripts, again absolving Google from undesirable and unsuccessful search experiences.

Students search in superficial/ineffectual ways

Students in both studies were found to experience infrequent search success and to use search in ways unlikely to result in new educational benefits. In terms of success overall, of the nine search tasks included in the first study's pre-test, just two were successfully completed by all pairs. Post the intervention, somewhat disconcertingly, only one of the nine different task was successfully completed by all. In the second study, students were observed searching with their parent-educators and individually assessed by a test incorporating an 'on paper' and 'online' component. During the observations, nearly half (42%) of all searches conducted by the home-schooling families were not successfully completed. Regarding the individual proficiency tests, just one of seven items on the paper component attracted full marks by all students while on the online component, no item attracted full marks for all students. If 50% is taken to be a 'pass', moreover, just one student passed the test's paper component and no student passed the online component, despite the tests being piloted for age-appropriateness and level of difficulty prior to distribution.

Potentially more telling are the search practices observed **across** the two studies. Certain limiting practices were found to be common, that is, despite the differing age of student, the differing educational location (school vs home), differences in search instrument (specified tasks vs 'open' search) and irrespective of whether searching alone or with a partner. The studies were also completed several years apart, suggesting perhaps that certain limiting practices have not become 'obsolete' or outdated (as in Ekstrand et al., 2020) despite their inefficiency and despite greater curriculum focus upon 'Digital Technologies' in Australia. In terms of scripting queries, students in both studies:

- tended to use natural language queries in the form of questions;
- failed to use inverted commas to refine their search;
- failed to use inbuilt facilities like genre-specific 'news' tabs or 'advanced search'; and
- infrequently attempted to rescript unsuccessful queries.

Once presented with results on a SERP, students from both studies:

- failed to go past the first results page;
- typically selected the first result displayed on the first page of results; and
- infrequently visited more than one website per topic.

This last point is not innately problematic. Visiting just one website could reflect an efficiency in finding the required information, assuming the information is correct and reliable of course. Unfortunately, other findings question the students' capacity to accurately evaluate websites. In study 1, two of the three groups frequently relied upon blogs or 'knowledge exchange' type websites in addressing their tasks. In the second study too, the home-school students were found to spend more of their test time on irrelevant websites (23%) than on relevant ones (9%).

What does this mean for educators?

Online searching has become one of the most prolific internet activities conducted both in schools (Fraillon et al., 2019; Vanderschantz and Hinze, 2019) and in home-schools (Morrison, 2021) and is reportedly the preferred first 'port of call' for sourcing information in education. This necessitates greater understanding of the skills required to search effectively and of the strategies and environments teachers can use to support students in attaining these skills. This section briefly recaps the insights presented, considers them with regard to existing research and wider social ideologies and presents some recommendations as to their bearing on classroom practice.

RQ1 asked, 'What types of talk (discursive practices) do students engage in during online search and during discussions of online search?' One insight was that students lacked a metalanguage to discuss online searching. This is problematic because online search is similar to any communication where a common language is required (Pikkarainen, 2011, p 1141) and where success is measured by reciprocal understanding (de Oliveira and Baranauskas, 2000; Tosca, 2000). Foss and Druin (2014) suggest the adoption of a metalanguage indicates

familiarity and comfort with digital tasks. Though students here appeared **familiar** with (some of) the search process, the findings of these studies suggest that they should not feel **comfortable** with the results achieved. It appeared that, as reported elsewhere (Combes, 2013; Ladbrook and Probert, 2011; Morrison, 2014; Spengler, 2015; Togia et al., 2014), the students had perhaps not experienced search instruction including the introduction of a search metalanguage. Failing to identify the unique set of terms associated with online search may help endorse the belief that a unique set of skills is not required either. If students are not discursively introduced to search as a complex process, their own discursive (and search) practices are likely to be limited and to reflect the persistent, yet misguided, belief that all searching equates to learning (Rieh et al., 2016). Such absence of instruction is also disadvantageous given that additional time online (even years) does not guarantee better online skills (Sonck, Kuiper, and De Haan, 2012; Van Deursen, Görzig, Van Delzen, Perik, and Stegeman, 2014). Indeed, three decades worth of evidence now confirms that mere access to technology 'does not facilitate new forms of learning' (OECD, 2016, p 39). Student searching is likely to improve when they are introduced to (and expected to use) some basic search terminology, if only because they will be better able to describe difficulties experienced. One can only imagine the success I might experience at the mechanic if I were to describe car trouble stating, 'I can't remember what I did [but] you said if you put a little mark on it or the little things [...] it will make a thing different'. Teachers can support the development of clearer search metalanguage by modelling its use. For instance, by referring to the SERP (search engine results page) when guiding search; to domains such as 'dot gov' or 'dot org'; to 'advanced search', queries and 'search tools'.

Teachers can support the development of clearer search metalanguage by modelling its use.

Also revealed by the students' discursive practices was an assumption that they play a passive role when searching, with Google being ascribed ultimate power. In the intervention in study 1, pre-test and interview findings were shared with students, including this perception of their passive stance, as indicated by Figure 2 choices. To challenge this perception, students were encouraged to think of using Google like driving a car, where the driver's role is critical. Posters placed in the room asked, 'are you driving this search?' Of interest, was that these attitudes and discursive practices proved harder to change than the search practices themselves. All students stressed that their online search had changed since the intervention, and changes were witnessed in the post-tests. Less change was evident regarding this passivity though in the post-interviews. When asked about his searching since the study, one boy explains 'I still let the computer kind of drive itself'. Another post-interviewee states, 'I'm used to Google making the changes to look for me'. This assumption that a digital user's passivity is 'natural' or even 'useful' was previously found by Selwyn et al. (2020) in their study of more than 1100 Australian high school students.

Given that attitudes are more important than resourcing or even teacher skill when it comes to increasing technology-enabled learning (Ertmer and Ottenbreit-Leftwich, 2010), it is imperative that teachers assist students in changing the way they think (and speak) about their role in online search. Such a change may be difficult due to the wider privileging of certain discursive practices (and ideologies) surrounding search. Consider the phrase 'Just Google it', for example, which removes searcher agency whilst the term 'just' trivialises this complicated process. Google has a vested interest in and capacity for privileging and naturalising assumptions that anyone can use its products. Consider the phrasing of Google's popular 'I'm feeling lucky' tab. Here too searchers appear discouraged from making extended efforts and are positioned as unskilled, inactive participants (Sun et al., 2014). To begin challenging such assumptions, teachers should ensure that they discursively position their students as active agents driving the search and as being in control of the results revealed. Ask students, 'What did **you tell** Google to search for?' and 'How did **you limit** your query?' Challenge students to try to progressively reduce the (typically millions of) results returned to less than 50, 10 or even one. Then discuss how they did so or struggled to do so foregrounding 'learning to search' not just 'searching to learn'. Huvila (2016) explains, as a society we find it counter-intuitive to critique search engines and their shortcomings. Evidence from the current studies suggest that students need to become more aware of these shortcomings, and of their own, if they are to experience the new educational benefits online search can provide. Teachers too, research tells us, create more effective, constructivist, higher-order search tasks for students once they begin to change their assumptions about 'the internet's potential as a teaching tool' (Hinostroza et al., 2021, p. 251).

... teachers should ensure that they discursively position their students as active agents driving the search and as being in control of the results revealed.

Regarding search success (RQ2) findings from these studies add to a body of research suggesting that students today are far from search experts (Argelagós and Pifarré, 2012; Gui and Argentin, 2011; Kammerer and Bohnacker, 2012; Quintana et al., 2012). All students experienced infrequent search success and used search in ways unlikely to result in new educational benefits. Throughout the search process students exhibited limiting practices including when scripting queries. Students, both at home and at school, predominantly used natural language queries in question format (as in Foss and Druin, 2014; Georgas, 2014; Kammerer and Bohnacker, 2012). Scripting queries to a great extent determines search results (Kuiper et al., 2008), so these findings strengthen Bilal and Gwizdka's (2018) suggestion that educators must explicitly teach how to script and **rescript** search queries. Indeed, findings from both Spain (Quintana et al., 2012) and Australia (Morrison and Barton, 2018) reveal that students will change their scripting practices post teacher intervention. When setting students a search task, let them choose the topic as often as possible but define very specific criteria for the search. Require that they find one source or website from Australia (by adding 'site:.au' to the end of queries), one from France and one from China for example. Ask for sources that were published in different decades or ask them to find websites that include conflicting information and to establish their own criteria for evaluating the credibility of each. In his seminal work, Marchionini (2006) also stressed the importance of 'multiple reiterations' and 'cognitive processing' of results if one is to go beyond simple 'look ups' (pp 42-43).

... educators must explicitly teach how to script and rescript search queries.

Once this support has occurred, educators may shift their focus to students' interaction with a SERP. Like elsewhere (Bilal, 2012; Duarte Torres and Weber, 2011), students here were indiscriminate about the sites chosen (although these typically came from the top of the first results page) and infrequently visited more than one website per topic. One of the 'new' benefits of online search is the SERP interface simultaneous displaying multiple site's domain extension identifying the origin of information (with .com representing a commercial site for example and .edu an educational one). That students do not consider this extension (Thomas, 2015) seems possible given their tendency here for choosing blog sites or those ending in the domain '.com'. These search practices not only inhibit students from benefiting in new educational ways, but also disadvantage them in ways unlikely had they utilised the (thoroughly vetted) print resources of old. Students will also benefit from being encouraged to consider multiple websites when searching. Perhaps require that students utilise at least 4 websites and only those sites with a domain extension of '.edu' or '.gov' for example. Beyond the immediate benefits of feeling more confident in the accuracy of information found, the OECD (2015) estimates that searchers who visit just one extra website per task score more highly on the PISA digital reading assessment scale.

Conclusion

True ideological change can take decades. So, while the 'end goal' may be to disrupt naturalised assumptions that technology use is always educational, and that all search equates to learning, in the meantime educators can begin by simply encouraging students to see online search as more complex. Indeed, while it may prove hard for individual teachers to challenge wider (macro) assumptions about search, those promoted by 'just Google it' type discourses (meso), research - including that detailed here - suggests students will change their (micro) search and discursive practices post some teaching intervention. To help ensure these practices result in new educational benefits, it is suggested that educators start: by introducing and encouraging students to use some basic search metalanguage; by inviting students to recognise their active and dominant role in the online search process; and by inspiring students to become more critical users of Google by being aware of its powerful and fundamentally commercial interests.

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Writer biographies

Emeritus Laureate Professor John Hattie

Through his role as AITSL's Board Chair, Emeritus Laureate Professor John Hattie provides national leadership in promoting excellence, so teachers and school leaders have maximum impact on learning. John's influential 2008 book 'Visible Learning: A synthesis of over 800 meta-analyses relating achievement' is believed to be the world's largest evidence-based study into the factors that improve student learning. Other notable publications include, 'Visible Learning for Teachers', 'Visible Learning and the Science of How We Learn', 'Visible Learning for Mathematics, Grades K-12', and '10 Mindframes for Visible Learning'.

James Hoffman

James Hoffman leads the Primary Curriculum team in Educational Standards with the NSW Department of Education. He is an experienced educational leader with a demonstrated history of success in public education. Passionate about empowering primary teachers, James draws on rich curriculum leadership experience to provide high quality, trusted expertise to improve teaching and learning for every student, teacher and leader.

Cheryl Bullow

Cheryl Bullow is an educator, an editor and a publisher of quality reading material for young people. After a decade of teaching, she took up a position as an educational publisher, publishing a number of high-quality reading programs. For the last ten years, Cheryl has worked at The School Magazine – producing rich and colourful magazines for young readers. She continues to believe that she has the most rewarding job in the world.

Dr Renee Morrison

Dr Renee Morrison is a lecturer in primary curriculum at the University of Tasmania. She taught in high schools for 14 years both in Australia and internationally. Renee's research focuses on technology and the capacity to assist educators and students reach their potential in the 21st century.