Research

Preliminary findings from the longitudinal study of big picture learning Australia university pathway students

John Fischetti[1] · Ann Hill[2] · Debra Lynch[1] · Joanne Pettit[2] · Joanne Rutkowski[2] · Viv White[2] · Deborah Chadwick[3] · Barry Down[4]

Abstract

Year 12 students in Big Picture Learning schools across Australia now use portfolios and interviews to apply for and gain entry to their first choice of university degree. They receive admission on the strength of portfolio evidence mapped to a new non-ATAR qualification, known as the *International Big Picture Learning Credential* (*IBPLC*). Since 2020, 270 graduates have received offers to university using the Credential, growing from 3 in 2017. Like other Big Picture graduates who went before them, they are continuing a trajectory of passion-based learning that began in Year 9 or 10 at one of 45 Australian Big Picture Learning schools. All IBPLC graduates begin tertiary study equipped with experiences in the real world, support systems with a range of community mentors and teachers, specialist knowledge in their chosen field, and a set of independent learning skills intended to give them the opportunity to thrive in the university setting. In this article we share the preliminary findings of a study of graduates of Big Picture Learning Australia secondary schools who have matriculated using the IBPLC. Findings from our surveys and interviews show promise that the learning design of Big Picture, which starts with an internship in a passion area, is the key factor in enabling the success of graduates both from high school and into their university studies.

Keywords School transformation · Tertiary transition · New admissions pathways to university

1 Introduction

The current system of secondary education in Australia is historically constructed on the belief that success at the end of school equates to the completion of the relevant leaving certificate [e.g. the High School Certificate (HSC) in NSW], and for students seeking university entry, an Australian Tertiary Admissions Rank (ATAR). [1] This is a system that is failing a diverse range of students who are disengaged in the current way we do secondary education in mainstream schools.

In contrast to the ATAR-driven process, Year 12 students in Big Picture Learning schools across Australia now use portfolios and interviews to apply for and gain entry to their first choice of university degree. They receive admission on the strength of portfolio evidence mapped to a new non-ATAR qualification, known as the *International Big Picture Learning Credential* (*IBPLC*). The program started with three students getting offers in 2017 from one high school based

✉ John Fischetti, John.Fischetti@newcastle.edu.au; Ann Hill, ann.hill@bigpicture.org.au; Debra Lynch, Debbie.Lynch@newcastle.edu.au; Joanne Pettit, Joanne.pettit@bigpicture.org.au; Joanne Rutkowski, joanne.rutkowski@bigpicture.org.au; Viv White, viv.white@bigpicture.org.au; Deborah Chadwick, deborah.chadwick@sydney.edu.au; Barry Down, barry.down@unisa.edu.au | [1]College of Human and Social Futures, The University of Newcastle, Callaghan, NSW, Australia. [2]Big Picture Learning Australia, National Office, Marrickville, NSW, Australia. [3]Sydney Conservatorium of Music, The University of Sydney, Sydney, Australia. [4]Centre for Research in Educational and Social Inclusion Adelaide, University of South Australia, Adelaide, SA, Australia.

on the evidence included in their portfolios and an interview with a university admissions committee. Since 2020, 270 graduates have received offers to university using the Credential, growing from 3 in 2017. Like other Big Picture graduates who went before them, they are continuing a trajectory of interest and learning that typically began in Year 9 at a Big Picture Learning school. Big Picture graduates begin tertiary study equipped with experiences of learning in the real world, strong support systems with a range of mentors and teachers, some specialist knowledge in their chosen field, and a set of independent learning skills intended to give them the opportunity to thrive in the university setting.

In this article, we share the preliminary findings of our study of graduates of Big Picture Learning Australia secondary schools who completed high school using the IBPLC. The protocol was approved in 2020 by the University of Newcastle, Australia, Human Research Ethics Committee (H-2020-0441) in accordance with the Australian National Statement on Ethical Conduct in Human Research.

1.1 Background

In Australia, Big Picture Learning Australia (BPLA), led by co-founders Viv White and John Hogan, has been operating since 2006 with over 45 schools in urban, regional, and remote locations. It has worked from the bottom up, partnering with one school and principal at a time, negotiating with one educational system, and one university at a time, with the aim to enhance the education of young people, often in our cities and regions' most disadvantaged schools. Recently, BPLA has come to the attention of reviews into Australian schooling, such as the Gonski Report, the Shergold Review; and the NSW Curriculum Review led by Professor Geoff Masters of the Australian Council for Educational Research. BPLA partners with six of the seven State education systems, and 17 universities around Australia [2].

The tertiary education landscape has been changing significantly over the last decade, with many institutions regarding the ATAR as no longer fit for purpose as a mechanism for predicting the academic success of prospective university candidates [3, 4]. Meanwhile, the number of students using an ATAR to apply for university entry has been steadily decreasing [3]. As a result, many universities have been broadening admissions pathways for school leavers to attract students who are a good 'fit' but may otherwise not apply to university, or who would have self-selected out of the secondary schooling system for reasons of disengagement, disadvantage, or anxiety around high-stakes exams [5, 6].

1.1.1 What is the Big Picture learning design?

The Big Picture Learning Design (BPLD) was first implemented in 1996, in the USA, when principals Dennis Littky and Elliot Washor co-founded a not-for-profit school known as 'The Met' in Providence, Rhode Island. Their aim was to jump-start vital changes in education by generating and sustaining student-led schooling where every student knew that they 'mattered' and were encouraged to explore as deeply or as broadly as they wished in areas of intense personal interest, free from the constraints of traditional schooling.

In his book *Leaving to Learn*, Washor argued that current school structures impose narrow definitions of success and impede productive learning. As he explains:

> "Dropout research identifies four big reasons many young people disengage from school, leave without a diploma, and rarely if ever return: academic failure, behavioural problems, life events, and disinterest. Our research indicates that beneath these big four reasons (and often off the researchers' radar screens) are four deeper reasons: not mattering, not fitting in, overlooked talents and interests, and restrictions" [1].

The BPLD is centred around students learning through their passions and interests and learning both *in* and *out* of school. Students do not have subjects, timetables, multiple teachers and classrooms, or exams.

Instead, they develop personal Learning Plans around their interests and connect their work to six rigorous Big Picture Learning Goals [2]:

1. Empirical reasoning
2. Quantitative reasoning
3. Social reasoning
4. Communication
5. Personal qualities
6. Knowing how to learn

These Goals purposefully align to the key learning areas of the Australian Curriculum. Big Picture learning advisors (the name for teachers) guide the students toward these goals, with the state content area syllabuses in mind, but do not follow a rigid course structure as in mainstream high schools. The student's research area of interest guides the journey.

Students regularly learn on required internships where they investigate their passion under the guidance of mentors in the community. They also undertake school electives, external community college/TAFE or university courses, and participate in seminars, or workshops that are connected to their passions and interests. Each term, students orally exhibit their learning to a panel of teachers, peers, family, and mentors. This allows them to demonstrate publicly their strengths and the depths of their knowledge gained over time.

The role of the advisor is that of a generalist teacher who guides students one-by-one, helps them to extend their ideas and research, provides feedback and support, connects them to people, resources and places related to their interests, and explicitly teaches them independent learning skills. Each advisor is a fully accredited teacher, most with many years of teaching experience in traditional schools. Each classroom is called an *Advisory* with 17 students and 1 consistent Advisor, who stays with their students through their high school career. Each student has their own personal cubicle as a working space in the modified classroom, and there is a common table for all students to gather as required, usually in the centre of the learning space. Students thrive from the sense of belonging (sometimes for the first time in their school lives), by being treated as young adults, and from exposure to other students' diverse passions and interests.

In Years 11 and 12, a key focus of students' work is a Senior Project that involves sustained, in-depth and original work, often with the assistance of an academic mentor from a university, or a practitioner from an industry, trade, or the arts. With the opportunity to work in situ in areas that interest and challenge them (as opposed to spreading themselves across multiple subjects in traditionally passive classroom environments), students produce work that is aimed at an entry-level industry-standard that is guided and verified by their mentors. The advent of the IBPLC means that students have no need to sit state-based standardised exams. As a parallel pathway, students complete their secondary schooling using the Big Picture learning design and the IBPLC. Since 2017 with their portfolios and since 2020 with the IBPLC and their portfolios, graduates have successfully transitioned to employment, training and university using this new pathway.

1.1.2 An overview of the changing Australian university admissions landscape

In 2011, secondary education and the holding of an ATAR was the prevailing entry pathway for over half of university students in Australia. In 2019, this admissions pathway had declined to 45%. From 2011 to 2019, parallel pathways emerged that supplanted the ATAR as "the" way to gain admission to tertiary education:

- higher education course transfers (from 22 to 24%)
- VET/TAFE qualifications (from 12 to 13%)
- alternative pathway entries such as pathway providers, enabling programs, access schemes, portfolio entry (from 9% in 2011 to 14% in 2019) [7].

In 2021, over 25,000 NSW students locked in their university placement via a high school principal's written recommendation called the 'school recommendation scheme', which was an increase from 5447 in 2014, further indicating the decline of the prevailing ATAR pathway [8]. This scheme allows a principal to tell the story of a graduate's journey and substantiate the reasons why an ATAR may not be a real measure of potential academic success. Another indicator of the increasing decline of the ATAR entry pathway is the use of predictive analytics (multiple data sources about student progression through school) which has demonstrated that a student's Year 12 HSC score can be predicted within 93% accuracy by Year 11 [9]. Evidence drawn from student work and performance is more authentic than the results of high-stakes standardised examinations.

Globally, countries like British Columbia and Canada use more contemporary forms of final student assessments such as 'real-world' projects in secondary education, whilst Estonia replaces old traditional approaches to assessing with more relevant emphasis on skills (critical thinking, problem solving, entrepreneurship, digital skills, and citizenship) employers are requiring [8]. BPLA's IBPLC approach aligns with these more globally relevant, innovative, and authentic approaches to assessing student learning, as well as potentially providing a more accurate analysis of a student's success in their postsecondary course of study.

1.1.3 How did the non-ATAR pathway to university evolve?

The IBPLC had its genesis in the *Graduation Portfolio* entry to university program, which began in 2016. Students who had been thriving in Big Picture in Years 9 and 10 faced uncertainty in their senior years. The Graduation Portfolio, supported by university admissions teams as an equivalent to the ATAR, allowed students to achieve a more seamless journey through high school. For some, this pathway kept them in high school rather than dropping out. Gathering the evidence of their learning and sharing it with admissions officers and program conveners of intended tertiary degrees extended the learning of the internships and aligned the research projects for an expert audience. BPLA approached several Australian universities to see if they were interested in pioneering a new pathway to undergraduate degrees for Big Picture students who could demonstrate deep knowledge and commitment to a prospective course of study. The University of Newcastle, led by Pro Vice Chancellor Professor John Fischetti (Dean of Education at the time) agreed to initiate a pilot project to enable Big Picture graduates to apply to the University using their portfolio evidence in lieu of an ATAR. That scheme was approved by the University's Vice Chancellor at the time. BPLA investigated a set of standards that could be used to map Big Picture graduates' capacities to give partner universities evidence of the quality of its candidates. The Big Picture planning team landed on the *Australian Core Skills Framework (ACSF)* to map against the *Graduation Portfolio*. The portfolio with its specific elements (including a Senior Thesis, an Autobiography, and a Post School Plan) was implemented to provide a framework for hosting student work that met the ACSF tertiary readiness threshold. The portfolio was organised to be presented to a panel at the university which included the program convenor of the intended degree program, lead admissions officers and a Big Picture advocate from the university community.

In 2017, the first three students from Hunter Sports High School in Newcastle gained entry to the University of Newcastle to study Business/Law, Physiotherapy and Biomedicine.

In 2019, based on student and family input, BPLA concluded that this personalised approach to transitioning students to university should be scaled up to provide a new form of final-year certification. The goal was to align the Big Picture design features and the student outcomes based on the design to a credential that universities could trust, and which would streamline the admissions process without relying on a single number, such as the ATAR. BPLA approached the Assessment Research Centre in the Graduate School of Education at the University of Melbourne for support in building a framework of assessment practices that would become a new secondary schooling credential. The result was the development and launch of the IBPLC.

1.1.4 About the IBPLC

The IBPLC is a new way of assessing and measuring what students know, can do and value. It is represented in an interactive digital transcript that accords equal attention to assessment results and to personalised elements including a student video profile, an online portfolio of student work, a biographical statement and photo, and a list of achievements and experiences [10–12]. In 2021, the Assessment Research Centre reported that the performance levels of the IBPLC more than met the standards set by equivalent or aligned skills in the Australian Core Skills Framework [13].

> *"... a consistent pattern of linkage is evident between the levels of attainment in the IBPLC and those of the ACSF, such that, for example, the standard of attainment of Level 2 on a Learning Goal of the IBPLC largely maps directly to Level 3 from the ACSF. Likewise, the standard of attainment of Level 3 on a Learning Goal of the IBPLC largely maps to level 4 of the ACSF. Those who perform at level 5 on the IBPLC are performing at above level 5 on the ACSF"* [13].

1.1.5 What tertiary courses of study have Big Picture graduates entered?

Big Picture graduates have entered a diverse range of courses, including Physiotherapy/Exercise Science, Primary Teaching and Early Childhood Education, Biomedical Science/Medicine, Nursing, Visual Communication/Design and Creative Arts [14].

2 Methods

This study employed a qualitative approach using both an online survey and semi-structured face-to-face interviews with Big Picture graduates.

2.1 Purpose and research questions

The purpose of this longitudinal study was to assess the experience of students who have graduated from high school using the Big Picture Graduation Portfolio process. Big Picture Learning Australia, in association with universities across Australia, agreed to pilot a parallel admissions process that allowed students to use a portfolio of evidence of their learning through their Big Picture School experience and a presentation of that portfolio to a panel of staff at the respective University of their choice. This study focussed on the following research questions:

1) How do students admitted to universities from the Big Picture Graduation Portfolio University Pathway perform academically compared to all other students in that admission cohort/program?
2) How do students who enrolled in universities from the Big Picture Graduation Portfolio University Pathway perceive their academic, social, and emotional progression at university work?

2.1.1 Data collection and analysis

The findings from this study were gathered from an online survey and semi-structured face-to-face interviews with ten (10) Big Picture graduates from 2019 to 2022, regarding their experiences in their first year at university. The interview data were transcribed by individual research team members. Next, the research team individually coded the transcripts. The separate codes were integrated into a code book. Once the codebook had been finalised, the team met to evolve the themes from the synthesis of codes. The findings and reporting of the data in this report was a collaborative and iterative process among university academics, university staff and members of the BPLA team. Interview transcripts were uploaded into NVivo. To enhance inter-rater reliability, intercoder agreement was established by all the authors separately and recursively sorting excerpts into nodes, and then comparing and merging their analysis to generate a final set of themes [15].

3 Results

Five themes and subsequent sub-themes emerged from the survey and interviews.

The first theme was *Prioritising Learning through Internship (LTI)*. Learning through internships contributed not only to students gaining insight into their chosen career interests but allowed students to gain confidence about their future and develop crucial skills (executive functioning, communication, self-awareness, self-motivation, goal setting, accountability, amongst others) to ensure career readiness [16].

3.1 Theme 1: prioritising LTI (internship)

The internship was a pivotal element of the BPLA design [2] and provided the opportunity for students to explore their interests (and find new ones), in the 'real world' and to learn by doing. Big Picture students work with their school team to investigate, approach, and establish an internship host in the community. Internships take place within a workplace or other community environment whose core business connects to the personal passions and interests of the student. Students typically attend that site one or two days a week during the school term and attend their school Advisory the remainder of the week. Students build skills and expertise in their area of interest and undertake a project that gives back to the host workplace. The evidence from the learning in the internship becomes the basis of each student's emerging portfolio. The connections that students build with adults and work settings during LTIs help them to negotiate their way in the adult world and develop workplace skills. They can build networks that support them to continue to work and learn outside of school, and the experience can help them to clarify their career goals. Through the LTI, Big Picture

graduates are taught to be independent learners who can plan their learning, manage their time, interact with a variety of adults, and seek out learning opportunities. They learn to give and receive critiques of work, and to persevere through periods of self-doubt or waning motivation. Frequent mention was made of LTIs in the responses from participants and most noted that the internship was a meaningful feature of their Big Picture experience, identifying it as an essential ingredient *for* learning:

> *"I honestly think that being a BIG PICTURE Graduate student has set me up the best way possible to enter Uni life. Lots of people don't get the opportunities that are provided in Big Picture so if you use your LTI and mentors for example, it really can help you in the long run." (Survey respondent)*

Most participants noted that their university degree pathway connected to the projects they completed, which included their LTI:

> *"Through my internships and research reports I continuously looked at my chosen interest of law and social science, which of course, is the current education I receive from the University of Newcastle." (Survey respondent)*

3.1.1 Expanding career aspirations

Internships allow students to explore interests and workplaces and form personal and professional connections outside of school. Participants noted that internships helped expand and consolidate their career aspirations:

> *"… in Year 11…I end up having a 14-week placement and one day a week going around the private hospitals watching lots of amazing surgeries so going from shoulder surgeries during my second week [to] watching an open-heart surgery to then watching general surgeons do gallstone removals and things like that and that kind of sparked the interest…I really liked surgery and that's like a potential avenue that I want to pursue and follow." (Participant 004)*
> *"…I can say I can see a really kind of strong connection there between…where you started working and where you identified your interests and then continuing those in Big Picture." (Participant 005)*

For some, the connections LTIs offered also led directly into career pathways:

> *"I think it was that during year 11…they offered me a job as a junior receptionist." (Participant 001)*
> *"I got a job, out of that and I'm currently working full time as a as a software developer…so it certainly led me into a role." (Participant 010)*

3.1.2 Acquiring workplace skills

Participants referred to the benefits of acquiring workplace skills and knowledge during their internships:

> *"…I feel like I have had an advantage due to all the experience and hands on stuff and what I've seen in physio compared to some of my [non-Big Picture program] peers." (Participant 001)*
> *"Learning from other people that…have life experiences that you don't learn at school, so yeah definitely I think the workplace learning is a big part of growing the person and learning …" (Participant 008)*

3.1.3 Providing authentic learning

Internships also afforded students the opportunity for authentic learning. In talking about their learning, participants used the terms such as 'real'.

> *"My Big Picture projects primarily centred around media production, which will be my chosen major in my degree." (Survey respondent)*
> *"My journey through Big Picture allowed me to look into the theory of education and then my internship allowed me to see this theory in action." (Survey respondent)*
> *"My thesis was all about how and why the Integumentary System is important in forensic pathology, my [university] course is working towards forensic pathology with forensic mortuary practice." (Survey respondent)*
> *"I am majoring in science communication; my Big Picture project was about designing exhibits to explain quantum mechanics to all ages." (Survey respondent)*

"The entirety of my Big Picture project work was connected to Law, including my internship, senior thesis, and PIPs." (Survey respondent) PIP is a Personal Interest Project)

"…what I was able to do is build my skills more working on that project which I was able to identify back to the internship… It's kind of very positive loop … not only for the internship but for the project and apply the learnings from one to the other." (Participant 010)

Self-efficacy was a contributing factor in the influencing of human achievement. We know that when students have self-confidence it plays a critical role in their academic performance, learning and success and is the forerunner for achievement [17]. The second theme to emerge from the data results was that of *growing confidence*.

3.2 Theme 2: growing confidence

A key facet of the Big Picture Learning Design is the development of reflective skills around some of the personal qualities required to succeed as a learner and a person, while building an awareness of the learning strategies and behaviours that are most effective for them. Students learn through their personal interests and passions and are encouraged to be in control of their learning. Big Picture students devise their own Learning Plans and alongside their Advisors and mentors embed opportunities to apply their skills and knowledge in the world outside school. The high degree of agency in their learning cultivates confidence, as does belonging to a small supportive community of learners in their Advisory.

For some, attending a Big Picture school represented a decision to re-engage with learning, after periods of disengagement, ill-health, or low attendance, and to envisage themselves finishing high school. John Hogan, Co-founder of BPLA, states, "We see students who learn deeply, reason and apply knowledge. We see them reflect on their learning and develop strong relationships. We meet many students whose re-engagement with learning is profound" [18].

3.2.1 Developing self-belief and self-regulation

In the longitudinal study, Big Picture students noted that not only are they developing confidence that they are 'good enough' to be at school but also at university.

"I always say, Big Picture changed my life, and if I ever get the chance to talk to people about my experiences there, I absolutely do. Big Picture gave me the confidence and motivation I needed to be able to finish high school and I will forever be thankful for that." (Survey respondent)

"Successes are very simple things, such as: passing my exams, getting my current HD in a subject. I live everyday hoping I get to my end goal of medicine, that will be my true success." (Survey respondent)

"...With this pathway, beginning at Big Picture, I have crawled out of dark places and transformed into myself, little by little." (Survey respondent)

Others acknowledged their capacities in their chosen fields as being significant confidence boosters.

"I have a graduate job and will have completed two degrees with a diploma at age 22 by the end of this semester." (Survey respondent)

"I was hired by a law firm at the beginning of my third year of study as a law clerk and was promoted to a legal assistant in July 2021. I was nominated by my place of work for the Lawyers Weekly Women in Law Awards Student of the Year in August 2021." (Survey respondent)

Participant X, a Big Picture graduate, was pursuing a career in law but realised after undertaking LTI with Big Picture that marketing was his true career passion. Through the internship, he was able to gain real-life experience and had the opportunity to create a spring campaign for that business and develop the workforce skills needed for this industry.

"I worked very closely with my mentor who owns his own marketing agency and that helped me develop the skills needed to work in the industry later on in life." (Participant X) [19]

Survey respondents indicated a high degree of satisfaction with their choices around their university studies. Here, 91.3% said they were passionate about being at university. Likewise, 90.9% agreed that their program of study was right for them and 68.2% stated that they feel they are in the right place at the right time in their life to do their studies.

"Uni has been both hard and easy at points while also offering me the change I was wanting in life. I believe that going to uni was the best outcome for me in regard to my happiness and future." (Survey respondent)

"Yes, I'm so glad about it because it is such a great program and honestly, I'd not be where I am today if it wasn't for Big Picture." (Participant 008)
"It's still like one of one of my best moments in my education career." (Participant 004 – Talking about the portfolio presentation).

Eighty-seven percent (87%) of respondents agreed that they are self-regulated learners and work easily without assistance. Additionally, 69.6% of participants agreed that they are an organised person.

"Big Picture learning allowed for me to learn how to be a self-driven learner, something that is needed in university." (Survey respondent)
"Completing high school was a major success of mine. I also am really proud of the marks I have been achieving at [my university]. There are many little successes I have achieved along the way, but I am just proud that I can independently manage myself and all the tasks I need to complete each semester." (Survey respondent)
"I have been far more successful in courses that are more closely related to my interests and career pathway. Additionally, I have been surprised at my success in courses that I thought I had no interest in." (Survey respondent)

3.2.2 Building communication/presentation skills

In the Big Picture Learning Design, students regularly present their work at public exhibitions. Learners explain, defend, or promote their work to an audience and receive affirmation. Throughout their schooling they are developing the public speaking and presentation skills required to engage an audience and to explain their learning with assurance. Study participants mentioned that the assessment by exhibition process used in Big Picture was a key factor in developing their confidence and communication skills.

"Yeah 100%. I remember coming to my first exhibition and my first presentation so scared I was reading off palm cards. I wasn't able to talk freely. But just with each one, I just grew slightly more and more confident, not only in myself and my presenting skills, but also the content." (Participant 001)
"Even in my life now, like in my gap year just working, I would not have any of these jobs that I would have that I have now. I wouldn't have the confidence, like the ability to talk to adults, all that kind of thing." (Participant 008)

This was also a demonstrated outcome in the 2015 Post-secondary Outcomes of Innovative High Schools: Big Picture Longitudinal Study, in the United States. Students reported they gained confidence in personal development, oral communication, interpersonal skills and the ability to interact with people from diverse backgrounds and adults, the development of effective public speaking skills [20].

3.2.3 Expanding study skills and life skills

The degree of autonomy that Big Picture students are accustomed to when driving their own learning establishes good research skills, the ability to plan and balance competing commitments in both study and life.

"I felt a little bit more advantaged than some of my other friends, because they were saying 'oh we're so used to just a teacher telling us what to do.'" (Participant 001)
"I got to be the [team] leader. That was really awesome and without Big Picture I wouldn't have had the skills to be a leader of a team like that so." (Participant 008)
"I think they're a great way to solidify what you've learned and not just say oh yeah I've done all this research." (Participant 008—on exhibitions)

Big Picture students are assessed through demonstrations of what they know, can do, and say supported by evidence of key pieces of work that they have produced. They are not compared to or ranked against other students. The survey asked participants what their preferred type of assessment tasks were. Looking at the overall results with preferred learning style rankings of 1 to 6, Individual assessment tasks were the highest followed equally by research assessment tasks and practical application-based tasks. Analysing the overall results with preferred learning style rankings of 7 to 11, examinations were the least preferred choice, followed equally by group assessment tasks and online assessment. This reflects the preferences of Big Picture students to undertake personalised tasks that contain a degree of autonomy rather than standardised ones.

"What do you like…what do you enjoy what are you interested in, and I actually had to think for myself." (Participant 009).
"I guess a good description of going through high school as a Big Picture student is I'm having a lot more autonomy…
so more ownership." (Participant 010)
"It was not a one size fits all…we're all kind of doing things have really worked for us." (Participant 010)

Big Picture students have experiences interning with organisations relevant to their field of interest throughout their schooling and can continue this while at university to support themselves financially and/or academically. Of the participants surveyed, 36% of participants said that they are doing paid work relevant to their degree program and 32% are doing voluntary work related to their career. (The number of hours that participants noted working varies from 1 to 4 to upwards of 16 h a week.)

"Successfully turned my LTI into a part time job, practically getting paid to help out, observe and further my knowledge in physiotherapy." (Survey respondent)

Student interest is essential for not only engagement in learning but academic success. When students uncover academic interest in secondary education and beyond, it provides a motivational disposition for learning, and guides academic and career trajectories [21]. Motivational factors in education, such as interest, autonomy, relatedness, and self-efficacy are crucial in the determination of students' self-regulatory efforts towards achieving their learning goals [22].

Plutarch (Greek philosopher)—*"For the mind does not require filling like a bottle, but rather, like wood, it only requires kindling to create in it an impulse to think independently and an ardent desire for the truth"* [23].

The third theme to emerge was that of *embedding passion-based learning*.

3.3 Theme 3: embedding passion-based learning

"The spark which ignites the tinder of curiosity,
taking a learner from initial interest to deeper and deeper levels of engagement and passion for learning – from a passive, conforming student to an active, self-motivated, purposeful, creative, and passionate learner" [24].

In the early years, children in early childhood settings engage in learning experiences that follow their interests every day. As the Early Years Learning Framework states "being responsive to children by knowing, valuing, and building on their strengths, skills and knowledge strengthens their motivation and engagement in learning. When children's evolving ideas and interests are followed their learning and development is extended" [25]. As children move into formal education, this concept can be lost in the emphasis on standardised teaching and assessment. A distinguishing feature of the Big Picture Learning Design is personalised learning where the focus is on 'one student at a time' [2]. At the beginning of each term, students create or update a personalised learning plan in consultation with Advisors and their families. The learning plan includes their planned out-learning experiences, projects they are working on, the resources they may need, workshops to attend as well as skills they may want to develop. As a result, students can determine how and what they learn through an exploration of their interests and passions.

3.3.1 Implementing interest-based learning

Most participants appreciated the opportunity to pursue their interests and passions as part of their learning:

"I really liked the idea of… the independent learning in Big Picture and learning about topics that you're interested in rather than just curriculum-based learning." (Participant 008)

3.3.2 Personalising learning design

The personalised approach to their learning allowed students to be engaged and feel that their needs were being supported:

"And it felt as though it was not a one size fits all. It was working out something that was specifically going to work for me and everyone else in the classroom with me had their own thing that they were doing, and I was doing my thing and we're all kind of doing things that have really worked for us." (Participant 010)
"All the portfolio stuff I think is amazing…The Big Picture program's such an individualized way of learning [instead of jumping] through the hoops." (Participant 007)

3.3.3 Developing learning dispositions and emphasising reflective practices

Participants believed that this engagement led to the development of strong learning dispositions and reflective practices, which were beneficial to their tertiary studies.

> "I have been able to use my skills in reflective writing/journal writing that I developed at Big Picture in assessments in university where other students do not appear to have the same level of experience." (Survey respondent)

There are many benefits to Project Based Learning. For this approach to be a success, the design not only has to engage the learner, but it also needs to be meaningful. The Big Picture approach of *Learning through Internships* (LTIs) is an example of how this is showing positive results connecting learning to graduates' post-school studies.

3.3.4 Providing higher education opportunities

Our analysis of survey findings and interview data indicated that there is a direct connection between students being able to pursue their passions whilst engaged in a Big Picture program to their chosen post-school degree choice(s). 80.8% of participants stated that their university degree pathway connected to the work completed in their Big Picture Graduation portfolio and their LTI. Participants noted the relevance of their previous study to their current university courses:

> "My graduation portfolio was centred around what makes a successful start-up, and what causes start-ups to fail. This is highly related…to the Bachelor of Innovation and Entrepreneurship, which is all to do with topics just like that." (Survey respondent)

Relationships are crucial for student success. Students have a range of relationships with teachers, family, peers, and community but what we know is that all these relationships matter. A prerequisite for student learning, growth and wellbeing is that of having positive educator-student and peer-to-peer relationships and these connections and feeling part of a community are contributing factors to student success and school engagement [26]. Emerson et al., (2012) found that parental engagement affords educational achievements such as improved school retention and attendance rates, adaption to school and an increased feeling of personal competence and self-efficacy for learning [27]. Likewise, strong school-family-community partnerships also promote motivated students who have higher educational aspirations [28]. The fourth theme to emerge was that of *building strong relationships/connections/support systems*.

3.4 Theme 4: building strong relationships/connections/support systems

The importance of relationships is one of the three key aspects of the BPLA design – *Relationships, Relevance and Rigour* [29]. Students spend hundreds of hours building connections with their Advisory teachers, peers and families working on the work of their passion projects. This team effort underpins strong wellbeing outcomes for BPLA graduates, and is a key 'learning how learn' strategy—Who else can I tap into? Where can I look for that? Who is an expert in this area? [30].

3.4.1 Prioritising the role of Big Picture advisors/advisory class

The Advisory structure in the BPLA design allowed students to develop strong relationships with their Advisors:

> "…having a lot more ownership in my own learning and kind of therefore a lot more buy-in, I felt like…it was more of a collaborative effort between the advisor and myself working out what was going to work well for me." (Participant 010)
> "The advisors were very supportive…throughout the two years I guess over the portfolio." (Participant 004)

3.4.2 Providing family and peer support

The Advisory structure also facilitates opportunities for collaboration and peer support—and is often referred to as a 'community of learners'. Students develop relationships with the other young people in their Advisory, and their school community, which allows for collaboration rather than competition: [31].

> "I'll never forget [this quote from an advisor] one student at a time in a community of learners." (Participant 009)
> "You find a lot of synergies with other people in Big Picture who are doing something that maybe complements what you're doing. For example, I was doing a project where I was building and doing software development, but I…needed

someone who was passionate about design, because I needed someone to design stuff…because I'm not a designer, I'm a developer." (Participant 010)

"In terms of people who have helped academically, my advisor from BIG PICTURE was a big help with basics such as time management etc. But when it came to my passion in Big Picture it would be my classmate X has been coding since he was 10 so he has a lot of experience in the field." (Survey respondent)

Families are also intentionally included in their student's learning journey, from planning through to execution and assessment, and are another key source of support. Families attend regular Learning Plan meetings, where students outline their plans for the coming period, and Exhibitions, where students share the successes and challenges of their learning journey:

"My mum is a nurse, so I speak to her frequently about my course. I also get advice from team members at St John Ambulance." (Survey respondent)

"I started my thesis in English and used that time with my English teacher to check over all my spelling or my grammar and make sure everything was in the correct format." (Participant 008)

"Whilst I was at high school my advisor was my main support for everything school and uni related. I have also really relied on my family for support and motivation to keep going." (Survey respondent)

"My parents have been my biggest and sometimes only support network and have helped to be able to go to uni." (Survey respondent)

"My family have been my greatest supporters. In addition, I have been in contact with my teacher from Big Picture from time to time also, which has been very useful. Additionally, a lecturer in the Innovation and Entrepreneurship space, was very helpful in my first few years of university and helped me find my feet." (Survey respondent)

3.4.3 Integrating community support

Connections beyond school, through LTIs, allow students to learn from experts in the field in their area of interest, discover other possibilities for growth and learning, and establish networks that will support them to find their way in the world [2]. Student connections with mentors and experts in the world outside of school were seen to be of significant benefit by many students:

"I had a few different mentors, and they all assisted my learning experience in extraordinary ways." (Survey respondent)

"I don't know everything and…talking to people and getting advice and talking to experts in the field about everything is super important." (Participant 010)

"You know the collaborative process between myself and my various different advisors and experts in different fields." (Participant 010)

Student responses indicated that this connection with an expert as a support for their learning continued into university, with over 60% of respondents indicating they sought out mentoring or academic support at university:

"I was able to get a head start on my learning by connecting with an academic mentor and implanting topics from the degree handbook." (Survey respondent)

"My internship mentor and Big Picture advisor are both there for me when I require assistance." (Survey respondent)

LTIs also give students the opportunity to talk and work with adults and build confidence in adult contexts. Over 80% of respondents agreed or strongly agreed that they felt they would, or do, interact well with their tutors at university and feel comfortable talking to them:

"Big Picture has definitely helped me and shaped my positive experiences at uni, my mentor and advisor from high school have also helped me." (Survey respondent)

3.4.4 Facilitating mentoring and sponsorship

The following comments from students indicate how all these relationships, Advisory, LTI and family are facilitated and supported by the design and come together to support learning:

"The passion that I have for law was nurtured and grew through my Big Picture experiences which has led me to be extremely dedicated and enthusiastic to my university studies. My Big Picture teacher and previous and current law teachers have given constant support which has reduced challenges and burdens." (Survey respondent)

"My teacher was the catalyst in my success at school, my LTI mentors also played a major role in giving me experience in the field of law, my university mentor also allowed me to enter the university and gain insight into what would lie before me …the main person that makes most things work for me in life is my amazing mother, who supports me in all facets of my life." (Survey respondent)

"Whilst I was at high school my [high school] advisor was my main support for everything school and uni related. I have also really relied on my family for support and motivation to keep going." (Survey respondent)

Transition periods throughout people's lives require a person to adapt to a new way of being or doing and the transitions that students undertake throughout their educational journey are no different. Big Picture graduates making the transition to higher educational institutes must adapt to new circumstances, expectations, people, environments, and routines [32]. Transitions require continuity between environments, expectations, and relationships [32]. Along with excitement and opportunities of transitioning between educational arenas, the prospect of challenges can also arise. The final theme to emerge from our analysis was that of *overcoming challenges*.

3.5 Theme 5: overcoming challenges

Our analysis of the data in this research revealed the challenges facing students in their learning journeys from school to university and beyond. A take-away message from the student narratives was that young people faced significant obstacles, interferences, and barriers to learning and university entry not always of their own choosing. Family and background circumstances as well as adverse life events presented challenges that could readily derail the best of intentions. Despite these barriers, students showed a growing confidence, awareness, and capacity to describe the conditions that both constrain and enable their learning and aspirations for university. This growing level of maturity and self-awareness enabled them to take greater control, ownership, and responsibility in planning their pathway to future study and careers. Throughout this report (themes 1–4), students identified and described in detail the kinds of organisational, cultural, and pedagogical conditions in the Big Picture design that allowed these aspirations to flourish. The narratives pointed to four dominant findings organised around the idea of challenges (and opportunities). Firstly, they faced the challenge of un/re/learning a different way of doing school using the Big Picture design for learning based on their interests and aspirations. Secondly, they noted the challenge of navigating the complexities of their personal lives and the ways in which those complexities impacted on their learning. Thirdly, they reported the challenge of addressing the limitations of mainstream schooling and creating new possibilities. Finally, they shared the challenge of negotiating university entry processes, transition, and finding academic and social support.

3.5.1 Rethinking selected Big Picture program processes

Our analysis showed Big Picture graduates' mature awareness of the challenges involved in implementing a new design for learning. They described some of the key challenges facing the Big Picture design within the constraints of existing mainstream expectations, beliefs and assumptions about teaching and learning, in particular the use of portfolios to assess their learning for university entry. Students described a feeling of *uncertainty* about how the portfolio would work, for example:

"I still think back to it, sometimes and just thinking about how raw it was and that uncertainty and you had no clue what was gonna happen or if you would be accepted or what not." (Participant 007)

Another student believed the portfolio may be viewed as a 'back channel' to university entry and therefore, not as legitimate as the traditional ATAR pathway:

"I think the perceptions are slowly changing…there is a misconception in people that are made…I did it because I got into uni early, skipping forward, or I was extremely smart, or I did it because I went through a back channel …. I guess that would be nice if it was recognized more, which obviously which is what you're working towards." (Participant 005)

One student observed the lack of awareness among teachers in the mainstream school about the Big Picture design and the potential of the portfolio to open-up new opportunities for learning and assessment.

"But and going through the tougher portfolio the teachers at the school had no idea existed, except the teachers involved in the Big Picture Program." (Participant 006)

During the early stages of implementation, students also described a feeling of being different to their mainstream peers.

"I lost all my friends in year 11 because I was suddenly having to go into the Big Picture classrooms. I wasn't in the mainstream buildings; I wasn't in the mainstream classes with my friends. I was in the Big Picture classes and was in the Big Picture room, and so it meant I lost all my friends." (Participant 006)

Amidst some initial uncertainty about how the Big Picture Design compared to mainstream approaches to teaching and learning, students showed a remarkable capacity to comprehend that while different, it provided them with opportunities they may not otherwise have in terms of engagement, interests, and control over their learning.

"I had the unique opportunity where we just have to pull everything from past experience and put it all together, but certainly allowing for also time to do those extracurricular activities in the program I think it's probably good." (Participant 006)

Students also described other challenges including frustration with changing and/or temporary Advisors (#003), lack of knowledge and awareness of Big Picture (#003), difficulty finding internships and mentors (#004) and a stressful school environment (#003).

3.5.2 Addressing personal challenges

Student comments remind us that young people have complex lives and are leading different life journeys. Complex combinations of circumstances around families, poverty, drug and alcohol abuse, and physical and mental health present enormous challenges for many students. For example:

"You know, I was dealing with some mental health issues as well, so public college really was a struggle. I saw a counsellor, and fortunately that counsellor knew of [from my school], which had just started up around the corner from, from the college …" (Participant 009)
"…it became too much for me to attend university. I also had some family troubles at home as well, and some relationship issues. At the same time, I had interpersonal issues and personal mental health trouble as well." (Participant 009)

In describing these personal challenges, students provided important clues about the relational and emotional dimensions of teaching and learning and why it matters. These kinds of personal challenges can be too much for some students, who find the rigidity and boredom of mainstream schooling irrelevant to their lives. For these students, there are significant barriers to address before learning becomes possible. They need to feel safe and trust that the school is acting in their best interests. Based on the narratives of the students in our study, we saw evidence that they were aware of the limitations of mainstream schools in dealing with their mental health and well-being, hence the desire to search for alternative educational settings such as Big Picture. As one student commented, 'I had interpersonal issues and personal mental health trouble … [however] I discovered that I had a lot more to me than I realized'.

3.5.3 Confronting prior mainstream education challenges

Students often find their way into Big Picture because they are disenchanted with mainstream schooling, which does not always acknowledge their personal and life circumstances, needs or interests. For some, it involves the irrelevance and boredom of the curriculum, pedagogy, and assessment, for example:

"The topics of the learning that was being taught just wasn't very engaging compared to what it used to be, or like the level that I was currently at, and then I joined Big Picture in year 9, so I could learn stuff that interested me." (Participant 002)
"And my needs weren't being met, you know my individual needs weren't being met in mainstream education. I couldn't get the support that I needed. So Big Picture did allow me the flexibility to complete and show that I can actually do the work at a university level. But I guess the support was the part that I felt was a bit lacking." (Participant 006)
"I think that the old school way of getting admitted into university is just going to become less and less relevant as learning changes and all has changed already." (Participant 007)

"I was quite disengaged with the typical schooling system; I have reached a point where I wasn't sure where I was going and if I was going to be going to university or anything at all. I was just like I had already been to like a couple of schools and it's just not working for me." (Participant 010)

All participants described a sense of disenchantment with the ways in which mainstream schools are organised. They mentioned timetables, didactic teaching, prescriptive curriculum, subject selection, rules and regulations, competition, and on-demand testing which seemed increasingly irrelevant to their needs, interests, and aspirations. As Washor and Mojkowski [1] argued, the focus needs to shift from 'the big four' (academic failure, behaviour, life events, and disinterest) to the 'deeper four' (not mattering, not fitting in, unrecognised talents and restrictions) as evidenced in the following student comments:

"… what attracted me in the first place was the idea that I could learn what I was interested in, and I could learn how I wanted because I'd been through school, and I didn't necessarily enjoy being taught the way that teachers taught, and I often found school just being a chore." (Participant 008)
"And I wouldn't have been able to even think of a project like that if I was at home, or if I'd been sent to a mainstream school." (Participant 003)

What students liked about the Big Picture design is the flexibility to have a greater say in what and how they learn and how it is to be assessed and reported [33]. Students felt the curriculum was relevant and connected to their interests and future aspirations. In this context, learning was relevant and not seen as something that is 'done to' students but 'with them'. This addresses two fundamental questions: Who in the world am I, or who am I in the world? What in the world are my choices and my chances? [34].

3.5.4 Focussing on selected obstacles in transitioning from Big Picture and in massified university experiences

Student comments reflected the challenges of navigating university entry requirements and linked to questions about the role of ATAR and related issues of standards, legitimacy, public perceptions, and the role of out-of-school learning. Students perceived universities in general did not understand the portfolio entry pathway and their programs provided 'mixed' messages and levels of support.

"Because physiotherapy is such a high demand competitive degree to get into I couldn't at that stage get in with my portfolio. Because I didn't have an ATAR score which they were really disappointed about actually. They really did want to give me a position in that degree, but yeah, they had to follow what they had done in the past, which is fair enough, but they did talk about the possibility of in the future, looking at portfolios into those more competitive degrees like physio." (Participant 008)
"Yeah, I sent those emails and after a few back and forth with [a university], especially because they weren't really on board with the Big Picture idea, I got an interview at [two other Universities]." (Participant 008)
"There was a certain point they offered an application placement thing for a transitioning program where you get to meet people and make friends and they said all big picture students could join that my teacher applied on my behalf, and I never heard back." (Participant 006)

These comments reflected some of the challenges of interrupting the traditional ATAR measure used for ranking and selecting students for university entry even though the number of students entering university via this method is declining. Students also reflected mixed experiences of the interview process. On the one hand, while some students appeared to experience very positive, encouraging, and supportive interviews, others had negative and discouraging experiences. This typically reflected the level of understanding of individual academics and in some cases, the status of the degree course involved. However, once accepted into university, students reported a different set of challenges related to transition, adjustment, and support. Students described a range of new challenges including, how universities do not readily adjust to student learning (#004), the need for better transition processes/transition to university (#006), excessive workload (#008), personal limitations and challenges (#009) and difficulties related to courses and style of teaching (#010).

On the other hand, Big Picture provided opportunities for students to complete Year 12 and enrol at university (#006), develop the skills required to succeed at university (#006; #007), become self-motivated and independent learners (#001), and develop confidence in public speaking (#010).

4 Conclusion

There is a sharp decline in the number of students using the ATAR for university entry in Australia and universities are broadening their admissions pathways to meet the needs of diverse learners. Over 40% of Australian universities have partnered with BPLA in accepting Big Picture graduates into their university programs using the Graduation Portfolio and the IBPLC. Our analysis of the preliminary results of this longitudinal study of BPLA University Pathway Students indicates that the use of IBPLC is an emerging authentic way of assessing student learning and may be a predictor of success in university studies. This research has demonstrated that the importance of prioritising learning through internships to not only expand students' career aspirations but also to enable the acquisition of workplace skills through authentic learning experiences. Another key theme that emerged from this work was that the Big Picture learning design aided graduates in building confidence, with participants indicating their development in self-belief and self-regulation, the building of valuable communication and presentation skills, and enabling strong study and life skills. Other critical aspects of the design gained from the research include the role of the Big Picture Advisor and the Advisory, the imperative of family and peer support, the integration of community, and the facilitation of mentoring and sponsorship. The biggest challenges participants faced in our study were the bumpiness of transitioning to massified university processes that were unfamiliar to Big Picture graduates—large lectures, standardised exams, and impersonal advising. Our university partners are taking these attributes of massified teaching on board as we work together to create new passion-centred pathways for our high school students. Our hope is that we build with our partners a more seamless secondary-university transition that purposefully embeds personalisation and overcomes the disengagement of so many young people currently in the old-school, stale secondary education process.

Data availability The datasets generated during and/or analysed during the current study are not available and are governed by the ethics process of the University of Newcastle Australia (H-2020-0441)/.

Code availability Not applicable.

Declarations

Ethics approval and consent to participate The survey, interview questions and methodology for this study were approved by the Human Research Ethics committee of the University of Newcastle, Australia (Ethics approval number: H-2020-0441).

Informed consent Informed consent was obtained from all individual participants included in the study.

Competing interests The authors declare no competing interests.

References

1. Washor E, Mojkowski C. Leaving to learn: how out-of-school learning increases student engagement and reduces dropout rates. 2013. Portsmouth, NH, Heinemann, USA.

2. Big Picture Learning Australia. BPLA case study. 2022. https://www.bigpicture.org.au/files/bpla_case_study_080822_final.pdf

3. Branley A, Duffy C. Wait for ATAR score no longer relevant to rising number of students given early university entry. ABC News. 2021. https://www.abc.net.au/news/2021-12-13/covid-sparks-more-early-university-offers-pre-atar-year-12-exams/100683026

4. Guardian staff and contributors. Should the ATAR be scrapped? Seven experts on the student ranking system. The Guardian Australia edition. 2022. https://www.theguardian.com/australia-news/2022/oct/17/should-the-atar-be-scrapped-seven-experts-on-the-student-ranking-system

5. Black S. 2022. 'Families can fall apart over this stuff': the children refusing to go to school. The Guardian. 2022. https://www.theguardian.com/australia-news/2022/sep/26/families-can-fall-apart-over-this-stuff-the-children-refusing-to-go-to-school

6. Jim W, O'Connell M. Those who disappear: the Australian education problem nobody wants to talk about. Melbourne Graduate School of Education, the University of Melbourne. 2019.

7. Li I, Jackson D. What we now know about other ways to get into university. EduResearch matters; Australian Association for Research in Education. 2022. https://www.aare.edu.au/blog/?p=14141

8. Fischetti J. We can predict final school marks in year 11—it's time to replace stressful exams with more meaningful education. The conversation. 2022. https://theconversation.com/we-can-predict-final-school-marks-in-year-11-its-time-to-replace-stressful-exams-with-more-meaningful-education-190071

9. Fischetti J, Smith M, Varanasi R. We know by year 11 what mark students will get in year 12. Do we still need a stressful exam? The conversation. 2020. https://theconversation.com/we-know-by-year-11-what-mark-students-will-get-in-year-12-do-we-still-need-a-stressful-exam-140746

10. Big Picture Learning Australia. IBPLC video explainer. Sydney, Australia. 2021. https://www.bigpicture.org.au/file/ibplc-explainer

11. Milligan SK, Luo R, Hassim E, Johnston J. Future-proofing students: What they need to know and how to assess and credential them. Melbourne, Australia: Melbourne Graduate School of Education, the University of Melbourne: Melbourne. 2020.

12. Washor E, Boldt S. Learning to leave: how real-world learning transforms education. Big picture learning. Providence, RI, USA. 2023.

13. Johnston J, Beswick B, Milligan S, Standards in the international big picture learning credential: mapping the IBPLC performance levels to the AQF and the ACSF., Melbourne, Australia: Melbourne Graduate School of Education, the University of Melbourne. 2021.

14. Big Picture Learning Australia. What is the International Big Picture Learning Credential? https://www.bigpicture.org.au/what-international-big-picture-learning-credential

15. Creswell JW, Plano Clark VL. Designing and conducting mixed methods research. Los Angeles, California: SAGE Publications; 2011.

16. Branco DA. The Significance of Internship Programs in Secondary Education. National Career Development Association. 2022. https://www.ncda.org/aws/NCDA/pt/sd/news_article/442532/_PARENT/CC_layout_details/false

17. Lone RA. Self-confidence among students and its impact on their academic performance: a systematic review. Int J Creative Res Thought. 2021;9(5):561–5.

18. Anderson M, Curtin E. LLEAP Dialogue Series (No.2): a practical guide to grow your ideas for maximum impact. Melbourne: Australian Council for Educational Research (ACER). 2013.

19. Shams H. Big Picture education Australia program helps students enter university without ATAR score. ABC News. 2021. https://www.abc.net.au/news/2021-04-19/hsc-alternative-pathway-big-picture-education-australia-no-atar/100075440

20. Arnold KD, Brown Soto E, Lynk Wartman K, Methven L, Gordon BP. Post-secondary outcomes of innovative high schools: the big picture longitudinal study. Boston: Boston College; 2015.

21. Harackiewicz JM, Smith JL, Priniski SJ. Interest matters: the importance of promoting interest in education. Policy Insights Behav Brain Sci. 2016;3(2):220–7. https://doi.org/10.1177/2372732216655542.

22. Schumacher C, Ifenthaler D. The importance of students' motivational dispositions for designing learning analytics. J Comput High Educ. 2018;30:599–619. https://doi.org/10.1007/s12528-018-9188-y.

23. Ratcliffe S. Oxford essential quotations. 6th ed. Oxford: Oxford University Press; 2018. https://doi.org/10.1093/acref/9780191866692.001.0001.

24. Centre for Curriculum Redesign (n.d.). The passion project. https://curriculumredesign.org/project-based-learning-pbl-purpose-passion/

25. Australian Government Department of Education. Belonging, being & becoming: the early years learning framework for Australia V2.0. 2022. https://www.acecqa.gov.au/sites/default/files/2023-01/EYLF-2022-V2.0.pdf

26. SchoolLinks Staff. 2022) The importance of relationships and how social emotional learning supports them. 2022. https://www.schoollinks.com/resource/the-importance-of-relationships-and-how-social-emotional-learning-supports-them

27. Australian Research Alliance for Children & Youth (ARACY). Researching parent engagement: a qualitative filed study. Canberra: ARACY; 2016.

28. National Education Association (NEA). An NEA policy brief: parent, family, community involvement in education. Washington, DC: NEA education policy and practice department: centre for great public schools; 2008.

29. Big Picture Education Australia. (n.d.). The big picture design for learning and school. https://www.bigpicture.org.au/files/u342/the-big-picture-brochure-web_v2.pdf

30. Vickers M, McCarthy M. (n.d.). Big picture education australia: reviewing the big picture learning design—The story so far. https://www.bigpicture.org.au/files/sum0067_review_v3_crop_0.pdf

31. Big Picture Education Australia. One student at a time in a community of learners – small schools by design: Enduring problems; old and new responses. https://www.bigpicture.org.au/files/sum071_enduring_problems_4pp_-_v2_0.pdf

32. Beyond Blue. What are transitions? 2023. https://beyou.edu.au/fact-sheets/development/transitions-in-learning-communities

33. Boomer G, editor. Negotiating the curriculum: a teacher-student partnership. Sydney: Ashton Scholastic; 1982.

34. Ayers W. Teaching toward freedom: moral commitment and ethical action in the classroom. Boston: Beacon Press; 2004.