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Empowering low-socioeconomic status parents to support their children in participating in tertiary education: Co-created digital resources for diverse parent personas

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Empowering low-socioeconomic status parents to support their children in participating in tertiary education: co-created digital resources for diverse parent personas

Increasing the participation of students from low-socioeconomic status (LSES) communities in tertiary education has been a policy focus of successive Australian governments. LSES parents are important influencers, yet are often unsupported in their efforts to help their children. Via two qualitative studies across metropolitan, regional and remote locations in four Australian states, a strengths-based, service-design approach identified four LSES parent personas: magpies, emus, possums and penguin parents. Each parent persona was at a different stage of change, requiring different types of social support. Digital solutions were co-created with LSES parents, reflecting the preferences of each persona. Four additional high-level contributions of this research include identification of the link between stage-of-change and social support requirements, LSES parents' preference for passive or mid-range levels of digital interactivity, differences in social support needs among LSES parents and the preference for and design of a digital transition-to-tertiary study support portal for LSES parents.

Keywords: social support; stages-of-change; college; parents; equity

Introduction

The decision to continue on to tertiary study is complex. For secondary school students, their parents are a valued source of information and key influencers of post-school choices. While there is considerable work dealing with student-centred transition assistance (Bowles, Fisher, McPhail, Rosenstreich, & Dobson, 2014; MacFarlane, 2018; Nelson, Smith, & Clarke, 2012), little is known about different types of *parents*, how they want to be supported, and their preferences for how that support is provided. This research focused on parents from low-socioeconomic status (LSES) communities as research indicates that lower socioeconomic status (Le & Miller, 2005) and income or lower educational attainment in parents can influence the likelihood of children transitioning to higher education (Le & Miller, 2005; Riphahn & Schieferdecker, 2012). Increasing access and widening participation (WP) of people from equity groups, such as those from LSES backgrounds, has been a policy focus of global governments. In Australia, WP in tertiary education has been a policy focus for decades, being first formalised in “A Fair Chance for All” in 1990 (Department of Employment, Education and Training [DEET], 1990). People from LSES backgrounds comprise the largest equity group in Australia, being 25% of the national population, yet they only represent 17.1% of higher education students (Koshy, 2018).

LSES families are often viewed from a deficit- rather than strengths-based perspective in tertiary education settings—focusing on what they *do not* have (deficits) rather than leveraging what they *do* have (strengths) (Gale, Parker, Rodd, Batten, & Stratton, 2013). This deficit-based account often translates into paternalistic interventions, where a group’s liberty or autonomy is overlooked because the group is viewed as one that needs help or lacks the capabilities to help themselves (Barnett, 2017). Paternalism infers disempowerment and an absence of opportunities for self-determination (Barnett, 2017). This approach also disregards the ‘funds of knowledge’. Funds of knowledge, defined as “...historically accumulated and

culturally developed bodies of knowledge and skills essential for household or individual functioning” (Moll et al., 2005, 133), are a key strength of LSES families.

This disregard of current strengths means that resources to help LSES communities are typically designed *for* them rather than *with* them; hence, they are less likely to be effective and lose the rich benefit of applying existing funds of knowledge. Using service co-design with LSES parents, this research developed four parent personas, determined the different types of social support required for each and the preferred tools to deliver this support.

Literature review

LSES parents are diverse

People from LSES backgrounds may experience lower levels of access to education (Koshy, 2018) and can encounter multiple social disadvantages, leading to an increased vulnerability affecting this population (Bradley et al., 2008). However, experiencing vulnerability does not mean an absence of aspirations (Chambers, 1989). Indeed, vulnerable people often possess ‘aspirational capital’—the ability to hold on to hope and pursue goals in the face of inequality and oppressive conditions (Yosso, 2005).

When secondary school students from LSES backgrounds aspire to tertiary study, predominantly as a means to improve their employment and income prospects, they find themselves engaging with education providers from a disadvantaged starting point (Harvey, Burnheim, & Brett, 2016). Parents are a key careers and education information source, often providing ‘hot’ knowledge for their children (Ball & Vincent, 1998; Career Industry Council of Australia, 2017). However, unlike secondary school students from other SES backgrounds, whose parents are more likely to have tertiary qualifications, the parents of LSES school students often have less tertiary education knowledge (Devlin & Mckay, 2017), potentially

because LSES people are not well-represented in tertiary education (Koshy, 2018). Indeed, LSES parents with lower educational attainment have reduced participation rates in parent outreach programs (Wood & Baker, 1999).

Parents are critical to widening participation in Australian tertiary education

The WP agenda has provided more opportunities for young people from LSES backgrounds to participate and attain tertiary qualifications (Redmond, Wong, Bradbury, & Katz, 2014). As these opportunities lead to intergenerational mobility they are promoted by governments (Mendolia & Siminski, 2016). Also, in line with aspirational capital (Yosso, 2005), LSES parents may desire their children to attain tertiary qualifications to bolster their life opportunities (Australian Institute of Family Studies, 2017), and indeed, may have high performance expectations (Davis-Kean, 2005). However, navigating the pre-access process is challenging in the absence of knowledge from support networks who have attended tertiary education and are familiar with how it works (Koshy, Dockery, & Seymour, 2017).

Student aspirations for tertiary education are the first step towards participation. Students' aspirations are often underpinned by parents' aspirations for them, and the support this can engender from parents (Koshy et al., 2017; Stuart, Watson, Vernon, Seddon, Andrews, & Wang, 2016). While LSES secondary school students and parents have stronger financial motivations to pursue tertiary education (e.g. to escape poverty), it is the parent's assessment of the likelihood of their child achieving tertiary-level qualifications that seeds aspirations, and this assessment stems from the parent's perception of their child's academic abilities and, importantly, the parent's knowledge of tertiary education options (Koshy et al., 2017).

While parent-focused interventions are strongly encouraged, there is a dearth of examples, with The Brotherhood of St Laurence's Parents As Career Transition Supports

(PACTS) project, while dated, regarded as a keystone model of good practice. PACTS attended to post-school transition support for disadvantaged young people and, after finding that most disadvantaged parents felt ill-equipped to help their child, PACTS focused on providing up-to-date, relevant information and skills on how to communicate with teenagers about their post-school transition. PACTS identified that knowledge about post-school options played a significant role in parents' ability to effectively support their child, and recommended the use of face-to-face and digital resources via an accessible, neutral venue (Bedson et al., 2006). While digital solutions were limited at the time of the PACTS program, nowadays a digital solution in the form of an online portal with tailored content provides a non-school, accessible and neutral venue.

Overall, parent-focused interventions are critical to improving the tertiary participation of LSES secondary students, and these interventions will be most successful if tailored resources for different LSES parents are delivered via preferred channels. It would be advantageous for a parent-focused, digital school-to-tertiary education transition support solution to not only curate information but provide a place for social–emotional support networks.

LSES communities: the same yet different

As articulated by Chambers (1989, 3), 'in the common stereotype, the lives of poor people are simple and uniform. The reality is often the opposite'. WP research repeatedly emphasises the diversity that exists among people from LSES backgrounds (e.g., Devlin and Mckay, 2017; Zacharias, 2016), yet demographic-only segmentation is used by governments to determine equity groups (see DEET, 1990). Demographic-only segmentation of LSES populations overlaid with psychographic segmentation will provide a more sophisticated approach, with more fine-grained insights that facilitate the identification of distinct LSES

parent sub-populations. For example, parenting styles and involvement in their child's post-school transition varies greatly (e.g., over-involved vs passive or even uninvolved) (Taylor, Harris, & Taylor, 2004).

LSES parents are at different stages and vary in their social support needs

This research is anchored by two theories: the stages-of-change framework and social support theory. First, the stages-of-change framework is part of the trans-theoretical model of behaviour change and assesses a person's readiness to change a behaviour and proposes that behaviour change unfolds in stages (Prochaska, 2008). In the WP context, these stages reflect an individual's behaviour in relation to actively seeking out and engaging with information and resources related to tertiary study for their child. In simple terms, the stages-of-change framework in the WP parent context would evolve as follows:

1. *Pre-contemplation*: LSES parent not even thinking about tertiary education options for their secondary school child.
2. *Contemplation*: LSES parent starting to think about tertiary education for their child.
3. *Preparation*: LSES parent beginning to look for information and assistance in supporting their child to make decisions about tertiary education.
4. *Action*: LSES parent actively seeking out and engaging with information/activities around tertiary education to support their child.
5. *Maintenance*: LSES parent regularly checking for most current information about specific courses, careers and tertiary institutions to help support their child.

The second theory used in this research is Cutrona and Russell's (1990) social support theory, which describes the structure, processes and functions of social relationships. This

theory emphasises the role of external factors, such as support, which serves as a ‘protective’ factor in that it insulates people’s vulnerabilities. Social support can be provided in high-touch or high-tech approaches (Loane et al., 2015). Indeed, online social support communities can be diverse and inclusive, allowing participants to give and receive support (Loane et al., 2015), as well as breaching the urban–rural tertiary divide (Cooper, Strathdee, & Baglin, 2018).

There are five types of social support (Cutrona & Russell, 1990)—all of which are relevant to a WP context and of value to LSES parents. *Informational support* may take the form of advice and guidance concerning possible solutions to a problem (e.g. career pathway planning), *instrumental support* includes tangible resources (e.g. assistive technologies for people with disabilities) and *network support* includes groups with common interests and concerns (e.g. community groups). *Esteem support* bolsters a person’s sense of competence and self-esteem (e.g. student ambassadors) and *emotional support* is the ability to turn to others for comfort and security (e.g. like-minded peer networks).

Different LSES parents want social support delivered with different digital tools

There is little research on the preference for different digital tools to assist parents with supporting their pre-access, secondary-student child. Digital tools can address critical barriers by providing community and network fora (Guidry et al., 2014). Variability in the types of digital tools preferred by different LSES parents is anticipated.

Internet accessibility and affordability are often raised as concerns regarding LSES communities. The Australian Bureau of Statistics (2018) reports that in 2016–2017, 97% of households with children aged under 15 years of age had internet access. Hence, digital solutions were considered viable.

Materials and method

This research involved a service-design approach. Service design is human-centred, co-creative, iterative, evidenced and holistic (Patrício & Fisk, 2013). This approach was used to generate imaginative, innovative and interesting service strategies to assist parents in considering tertiary education after Year 12.

The research involved two qualitative studies. Participants came from four Australian States/Territories, from a mix of urban, outer urban, inner regional, regional and remote areas. This discrete study occurred from 2014-16. The first study focused on co-creating parent personas via interviews that delved into the key psychological motivators and concerns that LSES parents had regarding tertiary study for their child. The second qualitative study involved participatory workshops with LSES parents to co-create digital service solutions. Both qualitative studies deepened understanding, allowing researchers to make sense of the multiple meanings and interpretations of a specific action, occasion, location or cultural practices (Johnson, 2002). The method selected permits researchers to probe participants' 'hidden perceptions' and overcome researchers' and their participants' cognitive biases (Marvasti, 2004).

The recruitment of LSES parents for the interviews and co-design workshops was conducted by the research team in conjunction with secondary school networks. Participation was voluntary. A total of seven LSES parents participated in in-depth interviews, and 20 participated in the co-design workshops. Of the interview participants, two were male and five were female, and ages ranged from 21 to 52. In the workshops, there were five males and 15 females with ages ranging from 24 to 60. Both samples had a mix of ethnic backgrounds, including Indigenous Australians, with at least one child who was currently school-aged.

The interview led parents through a 'what success means' storyboard, a 'day in the life [of the parent]' activity, mobile phone ethnography and a support tools card sort. These

activities were designed not only to discover parents' attitudes, concerns, and motivators when it came to success and tertiary education but also their needs and preferences for digital delivery of current and future social support. The workshop then focused on co-creating the tools tailored to each of the parent personas and included sections on persona self-identification, feedback on current support options, design principles, customer journeys, and then ideation and prototyping of proposed digital and people-rich support options.

Results

The three major findings included: a) four LSES parent personas; b) how LSES parent personas were at different stages of change, requiring tailored social support; and c) the preferences of each persona for digital tools to deliver social support.

Major finding: four different types of LSES parent personas

Personas are the qualitative expression of participant voices distilled to the key characteristics, motivations, barriers and behaviours (Miaskiewicz & Kozar, 2011). The research identified four types of LSES parents and developed personas for each group based on Australian animal characteristics: magpie, emu, possum and penguin parents. Personas were developed in the interviews via two phases.

Persona development phase 1: Key themes

In the first instance, data were examined to determine key themes in parents' experiences and perspectives that could form the basis of the persona typology. Four themes emerged.

Theme 1: confidence and personal experience. Parents varied in terms of how confident they were in their ability to help their child navigate tertiary education choices. Some parents who had not experienced tertiary education wanted the opportunity for their child, while others

preferred the child to follow in their footsteps. This is consistent with past research that found low parental experiences reduce confidence (Redmond et al., 2014).

Theme 2: identity. LSES parents also harboured perceptions that tertiary education students were 'not like them'. This suggested a psychological distance and identity separation from those who attend tertiary education, consistent with prior research (Sellar & Gale, 2011).

Theme 3: variations in the need for soft knowledge. Soft knowledge emerged as a theme, being information that was empathetic to parents' emotional experiences and reassuring to help enhance their confidence. There were mixed feelings about a child's ability to navigate pathways, with some parents highly confident in their child's capabilities and others less so. Some LSES parents were passionate about students needing role models and life mentors, but there were mixed views on who should be the role model/mentor. There was also disparity amongst parents in terms of the level of involvement they are willing to have in assisting their child with career choices, illustrating that this is a diverse group of people who need a personalised approach. The need for soft knowledge for some parents was paramount (see Burke, 2017).

Theme 4: variations in the need for hard knowledge. Often present was the desire for hard knowledge, being information and functional resources that speak in terms that parents understand rather than in jargon. This was combined with an inside view of what careers are really like so young people can make informed decisions. However, there was a perceived lack of support that is personalised and available when needed. Parents' preferences for digital activities were due to the ability to preserve anonymity and provide self-paced, personalised information. Personalised tools are known to increase self-efficacy (Kiyama, 2010).

Persona development phase 2: Determine psychological points of parity and difference

Next, the personas were developed by analysing the similarities and differences in psychological characteristics amongst parents, such as differences in the definitions of success, views on child independence and parent roles. The personas developed in this research needed to be neutral in terms of gender, ethnicity and age. The personas needed to be generic enough to resonate but specific enough to communicate the core attributes. As personas are typically represented visually with an image, Australian native animals were selected; the animal images were anthropomorphised to have sufficient human qualities to generate an emotional transfer while still retaining the animal characteristics (Tam, Lee, & Chao, 2013).

Based on the interview data, each persona was accompanied by two visualisations to aid in interpretation being a continuum of psychological characteristics (e.g. notions of success, parenting style) and key support mechanisms (i.e. relevant aspects of social support theory). Key motivators for and barriers to participating in tertiary education derived from the interview data as well as relevant emotional factors and messages for communicating with each persona were also included.

The four parent personas

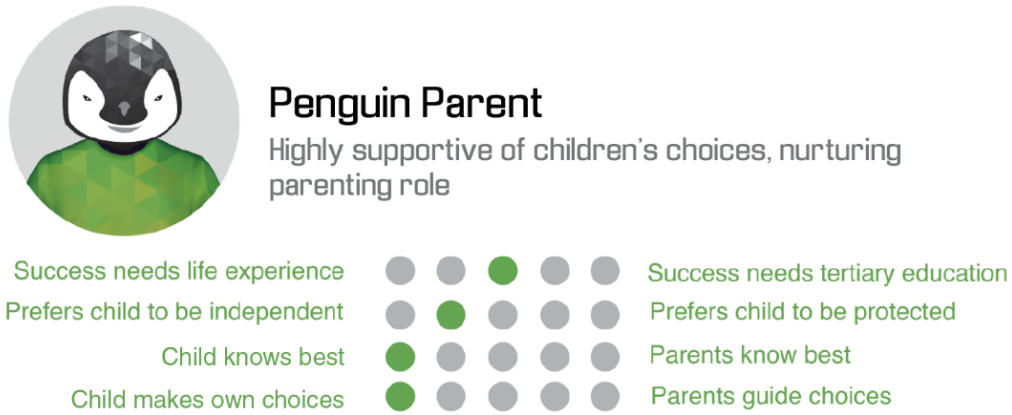
The parent personas and visualisations are now presented.

Penguin parents. The penguin parent persona (see Figure 1) is characterised by being highly supportive of their children's choices and preferring the child to be independent. In their view, the child knows best and can make their own choices. The penguin parent is at the contemplation stage of change and requires network and esteem for social support.

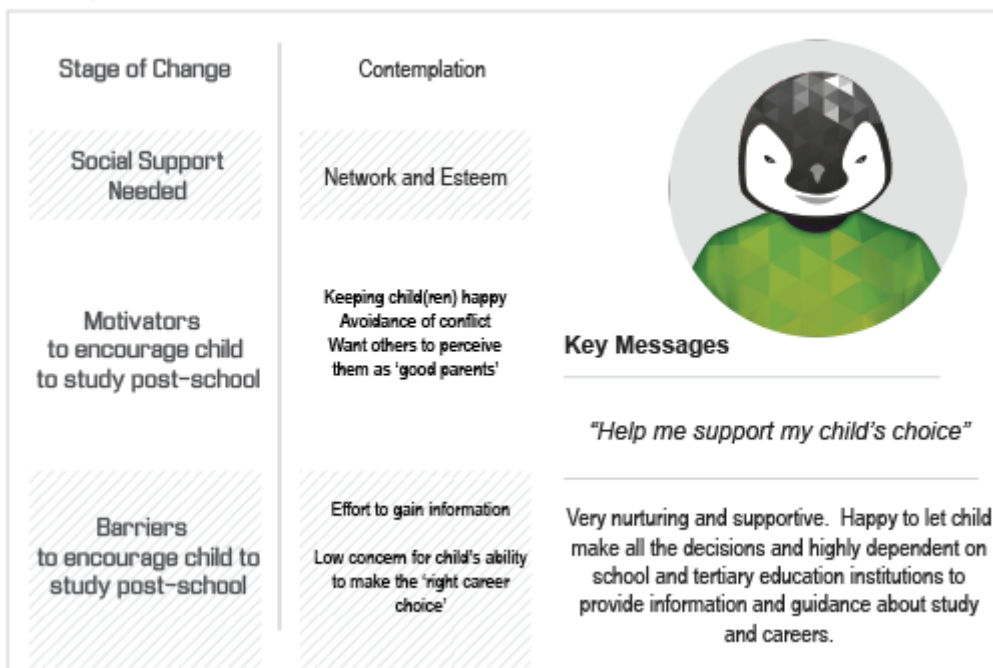
Motivators to encourage the child to study post-school are keeping children happy, avoiding

conflict and the desire for others to see them as good parents. A key barrier is the effort required to gain information about tertiary studies.

Figure 1: Penguin Parent Personal Psychological Characteristics



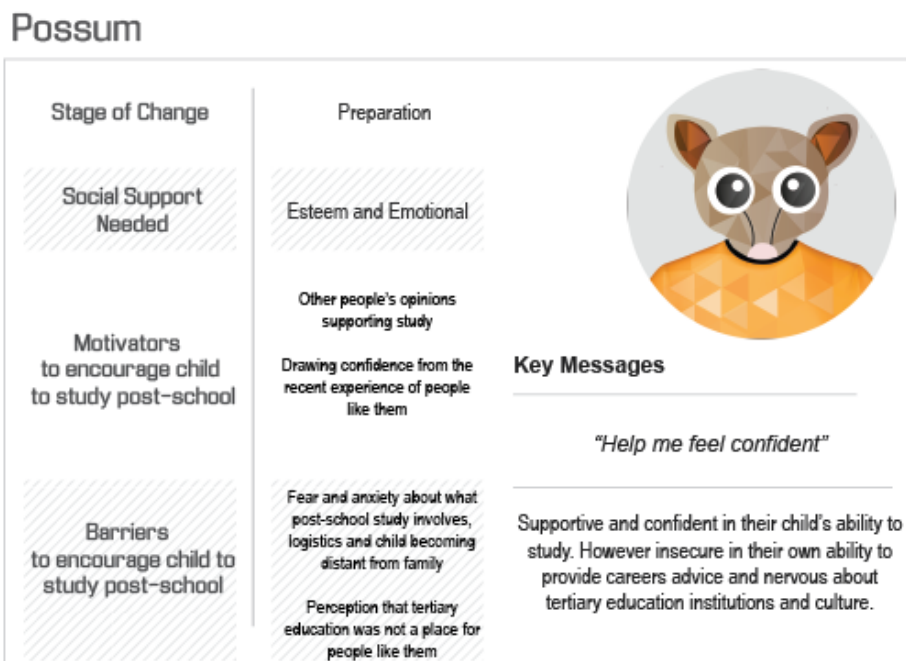
Penguin



Possum parents: The possum parent is characterised by wanting the best for their children but is a little unsure of how to help (see Figure 2). This persona is of the opinion that success needs life experience rather than tertiary education. They consider that while children should drive the decisions around study and career choice, they still need protecting. The possum

parent is at the preparation stage for their child applying for tertiary education and requires esteem, emotional and social support. Motivators are other people’s opinions about tertiary study, and they draw from the experiences of other people like them. The barriers are fear and anxiety about what post-school study involves for their child and whether their child will become distanced (physically and emotionally) from the family. There can also be the perception that tertiary institutions are not a place for people like them.

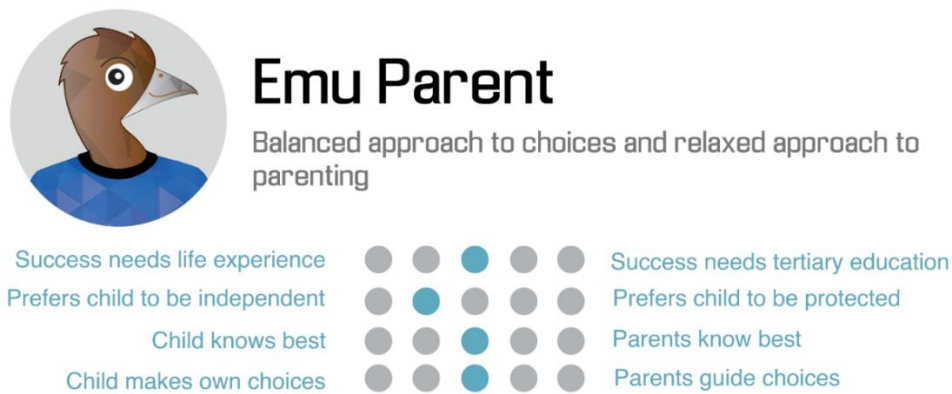
Figure 2: Possum Parent Personal Psychological Characteristics




Emu parents. Emu parents are characterised by having a balanced approach to choices and a relaxed approach to parenting (see Figure 3). Their preference is for the child to be

independent but will work with them to make choices about applying for tertiary education. The emu parent is at the action stage of change and requires networks for social support. Motivators are the desire for the child to succeed in life and be happy. They recognise that education is an important factor in gaining this happiness. Barriers are related to insufficient information about courses available and pathways to tertiary education. This type of parent may be uncertain about whether the culture of tertiary education institutions will be a good fit for their child.

Figure 3: Emu Parent Personal Psychological Characteristics

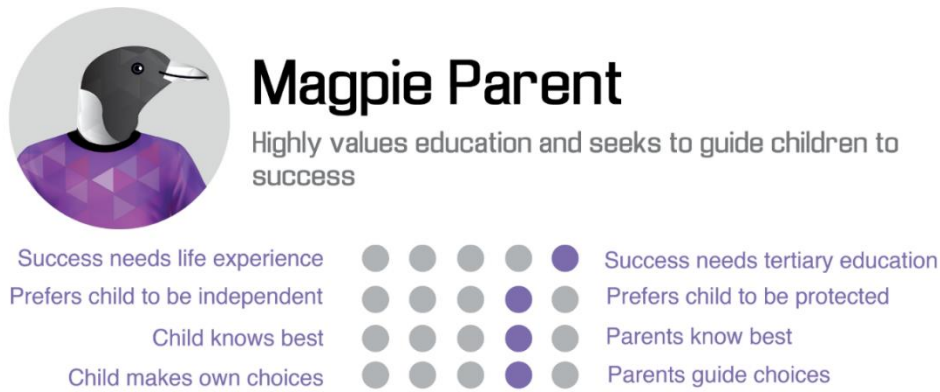


Emu


<p>Stage of Change</p> <p>Social Support Needed</p> <p>Motivators to encourage child to study post-school</p> <p>Barriers to encourage child to study post-school</p>	<p>Action</p> <p>Network</p> <p>Desire for child to do well in life and be happy</p> <p>Recognition that education is an important factor in being happy in life</p> <p>Sufficient information about courses available and pathways</p> <p>Uncertainty about culture of tertiary education institutions and if this will fit with their child</p>	 <p>Key Messages</p> <p><i>"Help me develop my child as a person"</i></p> <p>A very balanced approach to parenting with a strong focus on building independence and coping strategies. Willing to guide, support and develop child both academically and as a person. Desires post-school study to be a full experience including social and extra-curricular.</p>
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Magpie parents: Magpie parents are characterised by valuing education highly and seeking to guide children to success (see Figure 4). They consider that success requires tertiary education and that parents know best and should guide choices, as the child needs to be protected. The magpie parent is at the maintenance stage in terms of the child applying for tertiary education and the social support required is networks. Motivators are confidence in helping the child make decisions about study and the view that education is critical for success in life. The only barrier relates to whether the child is capable of tertiary study.

Figure 4: Magpie Parent Personal Psychological Characteristics



Magpie

<p>Stage of Change</p> <p>Social Support Needed</p> <p>Motivators to encourage child to study post-school</p> <p>Barriers to encourage child to study post-school</p>	<p>Maintenance</p> <p>Network</p> <p>Confident in knowing how and what to say to help child make decisions about study</p> <p>The role of education is perceived as a critical factor for being successful in life</p> <p>Lack of belief that child is capable of studying post-school</p>	 <p>Key Messages</p> <p><i>"Help me direct my child"</i></p> <p>Structured approach to parenting with a strong focus on education and achievement. Proactive in child's education and choices and willing to go to extreme lengths to ensure child continues on to tertiary education.</p>
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Major finding: how LSES parent personas are at different stages of change, requiring tailored social support

It was found that the parent personas varied by stage of change, which mapped to differences in the type of social support that was needed. The penguin persona is in the contemplation stage of change and needs network and esteem social support to help them assist their child's transition to tertiary education. As one penguin parent said:

I'd also get like testimonials I guess you'd call it from family and friends and stuff like that...people I know who have gone to different universities and I know that I know quite a few who have gone to different...different [campuses] even, like there's been a few people who I know have gone to [this campus] and then there's [the other campus] and then I've known many people who go to university...[University Name] and stuff like that so really outreach would be like hey what was your experience? (Penguin Mother)

The possum persona is one stage of change ahead of the penguin parent and is preparing to help their child transition to tertiary education. Possums benefit from esteem, emotional and social support, particularly from people like them but who have already been through the tertiary transition experience. Possum parents are concerned about guiding and protecting their child from negative experiences, including potentially regretting their choice of tertiary education, and so will seek information from others with relevant experience wherever possible, as in the following quote:

I meet so many people from different walks of life and I've met commandos and so forth and you know they've said give yourself options [Son's name], do very well at um...high school and then give yourself options, but you know he wants to go in the regiment, and I said well that's your choice. The biggest thing I don't want my children to do is regret. How many times have you met someone that's just regretted what they've done? (Possum Mother)

The emu parent has already arrived at the action stage of change and requires networks and social support in order to keep moving and achieve their goal of ensuring their child is happy and successful. This focus on happiness in life as being a part of success and the emu parent's tendency to look for examples of this happiness in others is highlighted by the following emu father's quote:

Okay, trade is fine. One of the apprentices at work is...dad is in the air force so he is in a trade in there and they've moved around a lot so he's found stability and a trade like the apprentice himself, the son. He lives by himself because his parents live in Townsville due to the parent's work...so he lives in Brisbane. Yeah, he's thinking about getting out and studying because he doesn't want to be like a 60-hour week type of thing again.
(Emu Father)

The magpie parent is the most advanced through the stages of change and is at the last stage, maintenance. This persona believes that tertiary education is a requirement for their child's success but still values the social support offered by networks as this reinforces their confidence in both their and their child's choices and abilities. As one magpie mother said:

Well, as a parent if I needed to help them, then I could maybe contact someone to help us and guide us in the right direction to assist that child. (Magpie Mother)

Major finding: LSES parent persona preferences for digital tools to deliver social support

Cutrona and Russell's (1990) five types of social support were organised into hard knowledge (i.e. informational, instrumental and network support) and soft knowledge (i.e. emotional and esteem social support) as these hard and soft knowledge themes had emerged from the data. All parent personas required hard knowledge, being informational support (e.g. career advice and guidance regarding tertiary degree options), instrumental support (e.g. tangible resources, such as assistive technologies, scholarships, on-campus accommodation) and network support (e.g. seeking knowledge from other people or organisations, such as

through workshops or seminars), which are typically provided by tertiary education institutions. Hard knowledge is based on logic, evidence and results (Ball & Vincent, 1998), providing LSES parents with a foundational understanding of the tertiary education options:

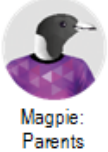
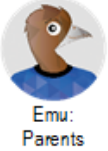
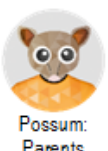

Online information [is] basically one of the first areas I'd look at just for information about [the transition to higher education] and then go either to workshops or maybe career mentoring. (Emu Father)

Unlike the other parent personas, possum parents also had a high need for soft knowledge. Possum parents need reassurance and draw confidence from the recent experience of people like them (i.e. esteem support) as well as to turn to others who are like them for comfort and confidence (i.e. emotional support). For example:

I didn't have a lot of help when I was growing up. Especially now there are so many institutions...that are trying to help these children to get on the right path and I didn't have that, and I'm 42. Not to say that it wasn't there, but I think they've got more choices these days where we didn't. (Possum Mother)

Of course like all parents we're nervous...we're nervous for their careers and how they're going to go and how they're going to get there and all that type of thing and you know how they're going to do. So there was nervous...nerves there...Sentimental, that goes without saying, and helpless. Helpless is you don't know what the next step is but you hope for the best for your child. (Possum Mother)

Figure 5: Social Support Preferences for Parent Personas

Persona	Ideas	Description	Emotional	Esteem	Network	Instrumental	Informational
 Magpie: Parents	Portal	Parent link: career pathways options "so my child and I are properly informed"					
	App	Career Calculator: utilising major details like ATAR, career choice, affordability, location					
	People	Connecting parents with schools: early year parent, careers open day with interactivity					
 Emu: Parents	Portal	Virtual University / VET: engaging, entertaining interactive experience providing information, pathways, connections with other parents and children					
	App	Goal Setting: structured goal setting, action plan and reminder app to be used for HE decision-making process and includes networks between professionals					
	People	Immerse us: short, intense workshops with parents, professionals and children					
 Possum: Parents	Portal	Uni Unmasked: simple information about university to demystify the experience, job options with alerts/reminders. Offer advice and counselling for the whole family.					
	App	Organise me: "an app to book appointments and remind me of events"					
	People	Managing the Anxiety: "schools to organise parent/teacher nights with careers counsellors to help us through the process"					
 Penguin: Parents	Portal	Understanding Uni: all-encompassing, social media-oriented, information-rich website that can be used by all					
	Blog	Practical Careers Blog: "provide me with in-depth entertaining information about careers and connect me socially"					
	People	Festival Vibe: "socially-engaging festival-style information sessions run by the school making it easy for me to attend"					

Passive digital tools communicate information in a one-directional manner (e.g. video), while interactive digital tools allow the user to both give and receive content in a timely and convenient format, relevant to themselves (e.g. webinar). Proactive digital tools use algorithms to identify future needs and automated recommendations (Kowalkiewicz,

Rosemann, Reeve, Townson, & Briggs, 2016). It was found that LSES parents had a strong preference for passive and mid-range digital tools, possibly as they were suspicious of or less familiar with how proactive tools might be useful in an education choice setting (Watson, 2013).





There was variation amongst the parent personas for interactive features, with penguin parents indicating a preference for features that were less directive compared to the magpie parents who sought digital tools that allowed them to direct their children, such as goal setting. The emu parent in the following quote uses digital tools to focus on what is needed, while the penguin parent uses digital tools to allow her child to guide the conversation:

You focus on getting the work and getting the career...the information you need then and there rather ...even though I myself do a lot of like the online information portals, which I do like, I don't like [some technology, when] there are too many distractions because you know my kids play with their phones; they play online games and they watch a DVD you know. (Emu Father)

I would rather just tell me what she wanted to do and then...and go [and] maybe [do] open university or something online and just be like okay this is what she wants to do, what kind of study is there. (Penguin Mother)

The digital support tools preferred by each persona were mocked up as a digital portal page. The persona pages were co-created with LSES parents, integrating social support theory, the stages-of-change framework and the literature on motivations and barriers for LSES groups (see Figure 6).

Figure 6: Levels of interactivity per persona

	 Penguin	 Possum	 Emu	 Magpie
Passive				
Financial Assistance Information				
Videos/ Podcasts / Blog Storytelling				
Explanations of Tertiary Education Terms				
Study / Career Checklist				
Course Options Catalogue				
Jobs / Careers / Work Experience / Internships Catalogue				
Industry Professionals' Database				
FAQs / Tips/ Hints				
Links to Tertiary Institutions & Social Media Platforms				
Calendar of Events				
Tertiary Institutions Locations Map				
Interactive				
Registration for Local Events				
Profile / CV Builder				
Avatar Builder				
Goal Setting				
Career Quizzes / Calculator				
Pathway Builder				
Games				
Support Forum				
SMS / Call Chat				
Online Chat				
Live Webinar				
Virtual Reality Training / Tours				
Email / Private Messages				
Proactive				
Recommendations				
Assistant				
Autopilot				

Discussion

This study aimed to better understand the psychological motivators and concerns of LSES parents in supporting their child's transition to tertiary education, as well as co-create digital service solutions to offer support for parents based on their motivators and needs. Many novel findings emerged from this research that are useful for WP practitioners, universities and governments pursuing an equity agenda.

To achieve our aims, the research leveraged two key theoretical frameworks – Stages of Change and Social Support – and found evidence for four different LSES parent personas: magpie, emu, possum and penguin parents. Each persona was found to be at a different stage of change—the implication of which is that the needs and preferences for social support and digital delivery of these varied by the stage of change. Applying these theoretical lenses has meant we are the first to understand LSES parents based not only on their income, gender, ability, rurality and ethnicity, but on their psychographics, what support they value, and at which stage this social support is most relevant. These empirical personas are an important contribution to the current stock of WP knowledge as they create a simple tool for tailoring supports and solutions, and address the problematic demographic-only view of LSES communities while respecting the funds of knowledge that LSES parents possess.

This research provides four high-level contributions. The first contribution of this research is the identification that the stage of change determined the social support needed by vulnerable LSES parents. While prior research has found that preferred social support varies with the stage of change (see Keller, Allan, and Tinkle, 2006), no research has identified the relationship between a *particular* stage of change and social support needs. Understanding that this psychological aspect (stage of change) underpins needs and preferences for a particular type of social support may explain why some LSES parents uptake social support while others do not.

Second, LSES parents prefer passive and mid-range levels of digital interactivity, despite the wide availability of highly interactive, intuitive digital tools (see van Doorn et al., 2017). This possibly indicates LSES parents may be suspicious and avoidant of any technology that has paternalistic characteristics of control and power.

Third, preferences for soft and hard knowledge vary for LSES parent personas. While prior research on vulnerable groups online has shown that all five types of social support are given and received (Parkinson et al., 2017), our research identified LSES parents' needs differed. This finding challenges previous WP research that soft knowledge is needed by all LSES parents (see Burke, 2017).

Finally, LSES parents wanted the solution to come to them (rather than them going to the solution – i.e., a push rather than a pull strategy) to minimise effort. For some time, there has been tension among practitioners as to the perceived efficacy of people-rich versus digital WP solutions. This research found that a digital solution was considered both familiar and accessible in the 21st century as internet access is widespread and devices are more affordable, but also that it also overcomes a multitude of psychological barriers – including the sense of ‘unbelonging’ – and enables anonymity, which may provide psychological comfort (Parkinson, Schuster, Mulcahy, & Taiminen, 2017). The internet is a key source of tertiary study information, including for people with disability and those in more geographically remote locations (Raciti, Eagle, & Hay, 2016).

Recommendations for Practical Application

This research provides evidence for the development of a comprehensive multimodal digital portal. Practically, we recommend that a national portal be created that brings all outreach activities under ‘one roof’ to make access and resource sharing easy. As the current project was funded by the Australian Federal Government, we suggest that an ongoing portal might

be delivered by a major education non-profit (e.g., Smith Family, NCSEHE) and potentially funded through HEPP or a coalition of tertiary institutions. As the portal would need to run for a minimum 10 years for appropriate tracking and evaluation, bipartisan support is also a necessity.

With regards to content, this research demonstrated that a digital platform and complementary app are preferred solutions. As such, the portal should have a homepage with a persona quiz that then directs people to relevant persona pages where content can be further personalised if desired. The portal should encourage user-generated content from all groups, provide sufficient volumes of relevant content and generate a sense of community and ownership (Goh, Heng, & Lin, 2013).

The portal can use digital storytelling to overcome myths about financial costs, job opportunities, fitting in and negative peer/family attitudes. Co-designed by participants, it was found that key LSES parent motivators are activated through interactive multimedia such as video, podcasts, tips/hints and quizzes. The use of employer content, success stories from similar groups, virtual mentoring and proactive tools assist in channelling the motivation from aspiration to reality. The digital portal can provide social support to LSES parent personas, is nationally scalable and is the principal recommendation of this research.

Recommendations for Future Research

We suggest that future research should still seek to apply a co-design approach, which builds on strengths rather than deficits and allows stakeholders to draw on their funds of knowledge. However, there would be great value in replicating this approach with different groups of parents, or indeed, with the students themselves – even developing personas for these students, and examining potential interactions between LSES parent and student persona dyads. In addition, a more granular approach to specific tools – that is, identifying not just the

class of tool but also exactly what needs to be included, would be helpful (e.g., videos are well-liked, but which topics are preferred for different personas?). Finally, longitudinal tracking and evaluation of long-term outcomes is warranted, and could be conducted in conjunction with a funding partner able to support the project for a period of 10 years. In summary, we suggest that future work (1) replicates this approach with other groups, (2) takes a more granular approach, and (3) supports long-term evaluation.

Conclusion

Overall, this research replaced deficit-based thinking by empowering LSES parents to co-design their own solution. The research identified four LSES parent personas and the social support needs and preferences of each persona and the digital tools that would be best suited to delivering these were co-created by participants. In addition to this novel approach, four high-level contributions emerged.

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