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USING PODCASTS IN PROFESSIONAL DEVELOPMENT:
PREFERENCES OF AUSTRALIAN KNOWLEDGE WORKERS

MA thesis

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Abstract

Using Podcasts in Professional Development: Preferences of Australian Knowledge Workers

Podcasts are a popular entertainment medium for many people. This thesis considers the use of podcasts in an educational sense to provide professional development to Australian knowledge workers, including accountants, lawyers, consultants, and policy advisors. These careers require ongoing maintenance of technical knowledge, and the research considers whether and how podcasts could be utilised for professional development. Interviews and surveys were undertaken with 85 Australian knowledge workers who regularly listened to podcasts to identify their experiences and preferences. Although podcasts as an educational tool have some disadvantages because they are an activity undertaken independently, and cannot offer live in-person networking, there is a desire to use them to in CPD due to their time and cost-saving characteristics.

Keywords: *podcast, educational podcast, knowledge worker, continuing professional development*

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Introduction

This thesis considers the use of podcasting as an educational tool for professional development among knowledge workers in Australia. It explores the experiences of knowledge workers with podcasting and their preferences on elements which would support their use and learning through the medium. It also considers the knowledge workers' learning preferences to seek to identify whether certain learners are more likely to prefer or benefit from podcasting use in professional development.

Key background concepts being explored in this thesis include podcasting as a learning tool and knowledge workers and will be explored further below.

Podcasting

The word "podcast" is a portmanteau of "iPod" and "broadcast" (Palenque, 2016). They are audio broadcasts which are accessible to listeners via websites or apps. Spotify is the most used audio streaming subscription service and has 345 million users (including 155 million subscribers) and operates in 170 countries (Spotify, 2021).

Podcasting is used for various purposes. Many listeners use them for entertainment, and many entertainment-style podcasts are also intended to be educational.

Podcast content also widely varies. They can vary from very short recordings to over one hour in length. The format also varies and includes:

- (a) Fully scripted podcasts.
- (b) Casual podcasts. The presenter appears to speak 'off-the-cuff' and includes vocal errors and loose direction of content. Multiple presenters may speak and joke amongst themselves in a casual conversation or chat style.
- (c) The inclusion of music and sound effects.
- (d) Interviews of live participants, and recreations of conversations between people by actors.
- (e) Varying sound quality – professionally recorded and non-professional recordings with voice distortion and background sounds.

The use of audio to convey training is not a new concept and has occurred since the advent of the Sony Walkman in 1979 and the audio tutorial movement (Simonson, 2015). Despite its long existence, its benefits in education are still being discovered (Palenque, 2016).

Some qualities of effective podcasts include that they represent a single idea explained verbally by the teacher, they are part of a series with each single presentation

related to others, they are available in an easily accessible electronic format such as MP3 files, they are easily locatable and accessible through a website or other Internet location and have currency and can be changed or updated frequently or as needed (Simonson, 2015).

It has been suggested that podcasting complements a constructivist approach to teaching (Palenque, 2016), and that the use of podcasting in higher education is “a modern-day manifestation of the theories of eminent scholars such as Dewey, Piaget and Vygotsky” due to its (Ng’ambi and Lombe, 2012).

Knowledge Workers

Knowledge workers are those who require technical content knowledge in order to effectively conduct their profession.

For the purposes of this thesis, four primary knowledge work occupations were explored: accountants, consultants, lawyers and policy advisors. The author is a former lawyer and policy advisor and is familiar with the education and skills needed for these roles, and the ongoing professional development requirements imposed upon them by society, employers, and professional associations.

Gottschalk (2014) explained the concept of knowledge workers:

“Basic knowledge is required for a ... professional to understand and interpret information, and basic knowledge is required for a ... firm as a knowledge organization to receive inputs and produce outputs (Galanter and Palay, 1991). Advanced knowledge is knowledge necessary to get acceptable work done (Zack, 1999). Advanced knowledge is required ... as a knowledge worker to achieve satisfactory work performance, and advanced knowledge is required for a ... firm as a knowledge organization to produce ... advice and ... documents that are acceptable to clients. When advanced knowledge is combined with basic knowledge, then we find professional knowledge workers and professional knowledge organizations ... (Mountain, 2001; Nottage, 1998; Phillips, 2005).”

Professional Development Requirements

In Australia, accountants and lawyers are generally required by their governing industry professional association to undertake Continuing Professional Development (“CPD”) annually in order to maintain their practising credentials (e.g. Queensland Law Society, 2021). The other key knowledge worker job categories included in this report, being consultants and policy advisors, do not have a mandatory CPD requirement, however, are still required to maintain their knowledge in order to effectively do their job.

Changes to the law are constantly occurring, requiring the need for diligent professionals to keep up to date in order to effectively represent clients' interests. Professional development can take various forms including attending formal and information training courses, reading journal articles, attending conferences, seminars, briefings, etc. It is this realm where the author proposes to consider the use of podcasts as an efficient, low cost opportunity for knowledge workers to undertake CPD.

Previous Research

Previous research has largely focused on the use of podcasting as a learning tool for students, including higher education students, and some skilled professions such as nursing.

There are certainly parallels that can be drawn between these podcasts and those for more desk-based knowledge workers. Higher education is not restricted to early adults undertaking a first degree, and may include older professional adults returning to study to undertake a second undergraduate degree or postgraduate degree. In Australia, lawyers require an undergraduate law degree plus either a shorter postgraduate diploma and/or a period of apprenticeship as a articled clerk to a lawyer, or an associate to a judge. Many universities offer postgraduate courses (individual subjects, graduate certificates, graduate diplomas, and masters degrees) in law and targeted at practising lawyers.

Looking at the use and effectiveness of podcasting amongst other professional groups, such as nursing, will also be beneficial. The day-to-day work of nurses can be more hand-on and skill-based than a lawyer's desk-based knowledge work, however nurses also require an underlying technical knowledge. The mixed need for nurses' skill-based professional development and content-based professional development can reveal where opportunities for more content-based podcasting professional development can be concluded. This will be explored more in the literature review.

Organisation of the Study

The study is organised in several parts. It commences with an introduction, a literature review of relevant past publications, original research through surveys and interviews of knowledge workers, an analysis of the research results and findings, and comments on implications for policy and practice.

The methods used in this thesis include a literature review, which was undertaken using access to online academic databases, and surveys and interviews with Australian knowledge workers about their experiences using podcasts and preferences about podcasts.

The knowledge worker research participants were located through various means. The author, as a former lawyer and policy advisor, still works alongside several knowledge workers for professional projects, and was able to speak with professionals within her network. The author additionally connected with knowledge workers through interview requests made in professional online networks.

Ten knowledge workers were interviewed, and 75 knowledge workers responded to the online survey. The interview and survey questions answered by participants were designed by the author and were validated in consultation with an Australian university academic with research experience.

Literature Review

The literature identifies and discusses:

- (a) What are podcasts.
- (b) Podcasts can be an effective tool for teaching knowledge to adults.
- (c) There are still unknown factors in how podcasts can best be used in professional development education for adult knowledge-workers.

Podcasts as Educational Tools

Podcasts have been used as educational tools for several years now, but their potential has not been fully explored (Palenque, 2016). Podcasts are different to other educational tools, which may present challenges and opportunities.

Making an effective educational podcast is not a matter of simply converting a recording of in-person lecture into an audio file. Simonson (2007) suggested the characteristics of an effective educational podcast were:

- (a) *A single idea that can be explained verbally or, if necessary, with audio and appropriate still or motion pictures (not a face talking).*
- (b) *A recorded event that is 3 to 10 minutes long.*
- (c) *Part of a series with each single event related to others.*
- (d) *A learning object available in an electronic format that is easily played, most often as an MP3 file.*
- (e) *Stored on a website or other Internet location for easy access.*
- (f) *Current and changed or updated frequently.*

Concurrent Activities

A unique characteristic of podcasts is that they are often used while the listener is undertaking a second concurrent activity (Drew, 2017). These activities vary, and may include tasks such as commuting, travelling, exercising, or undertaking chores. Often the activity requires a low level of concentration, such as walking for exercise, but occasionally may require a higher level of concentration, such as driving a car.

When students engage with other educational methods, they do not typically undertake a second concurrent activity. A student who is attending a lecture in-person on campus, or watching a recorded lecture at home, would normally focus on learning. They may focus on what the teacher is saying, the information displayed on PowerPoint slides, or on taking notes. It is acknowledged that some students do undertake concurrent activities, while attending classes, such as reading emails or browsing the internet, however this is a less common phenomena. Podcasts are highly expected to accompany a second concurrent task (Drew, 2017).

The existence of a concurrent activity when listening to a podcast which draws focus and concentration by the listener (student) may present a challenge when seeking to use podcasts for education. It is suggested that this altered level of focus in the learner needs to be accommodated when designing the podcast.

Format of Podcasts

The format of the audio content of podcasts varies. An audit of podcasts revealed several key formats. Fourteen podcasts were examined, which were available in Australia in April 2021 via the Spotify app. The podcasts were considered educational because either the podcast producer used the “educational” tag in the podcast description, or the author identified it as educational due to the nature of the podcast producer and podcast description.

Podcasts typically include one or more elements of:

- (a) **Audio quality.** Typically, podcasts had good audio quality: clear voices, stereo sound, no background noise, and no distortion.
- (b) **Two or three speakers.** Podcasts with only one speaker were uncommon. The speakers may be co-hosts, or there may be a solo host with guest speakers or interviewees.
- (a) **Highly Scripted.** Some podcasts seemed highly scripted and edited to be similar to a documentary. The content was intentionally clear, logical and coherent. They may include a solo host, interviews, re-enactments, sounds/music, and the host guided the listener on a logical journey.

- (b) **Conversation**. Some podcasts were themed conversation where two or three speakers would converse on a topic. Typically, the speech was not polished (e.g. ums and ahhs, backtracking) nor necessarily highly coherent (e.g. inclusion of unrelated anecdotes, not in logical knowledge sequence). Some conversations operated similar to conference panel discussions with a moderator who would control questions and answers.
- (c) **Interview**. These podcasts typically comprised a host interviewing a guest speaker or interviewees who joined the podcast series either once or periodically, and added credibility and content expertise missing in the host.
- (d) **Converted Podcasts**. These podcasts started life as a different educational tool and the audio was converted into a podcast, for example, an in-person lecture converted into an audio podcast. It often appeared that these podcasts were an afterthought. They often lacked completeness as the speaker would refer to PowerPoint slides the podcast listener could not see.
- (e) **External Support**. Some podcasts had websites or social media accounts to provide access to additional information or to host forums where listeners could discuss the podcast content.
- (f) **Standalone**. Episodes which can function as standalone content, independent of the larger podcast series, for example an individual podcast episode about contract law within a ten week series about different kinds of laws.
- (g) **Series**. Multiple podcasts in a series group. The series may have a defined end (e.g. a 10 episode podcast) or be ongoing indefinitely (e.g. a regular weekly podcast with no defined end date).

The format of podcasts therefore can differ substantially from traditional on-campus or recorded lectures. A lecture is commonly a single teacher, speaking, accompanied by PowerPoint slides. The lecture typically opens with an introduction, a summary of the key points to be covered, each point then examined in-depth in turn, classroom activities (if the class is live), and a conclusion. While a podcast *can* roughly follow this format, it is uncommon and undesirable to do so as it disregards the different nature of the tool (Simonson, 2007).

Underlying Educational Philosophies

The variations in delivery format for podcasts alters the underlying educational philosophy and affects how learning occurs. The content which is conveyed to learners in a Highly Scripted podcast is likely to be different to that conveyed in a Conversational podcast. One

is clear, logical and coherent, with the speaker providing a clear educational “truth”, whereas the other may be incomplete, leave to chance the inclusion of relevant information, meaning the student must identify which content is useful, which can be discarded, and knowledge gaps to explore further. Both scenarios are modified if the podcast utilises External Support.

Palenque (2016) suggests that podcasts complement a Constructivist approach, and draw upon educational theories by Dewey, Piaget and Vygotsky.

Drew (2017) suggests that “pedagogically, conversation between panels of multiple presenters engaged in institutionalised conversation has the potential to engage listeners in higher order thinking skills like analysis and synthesis”.

Mayer (2009) developed the cognitive theory of multimedia learning. He believed that although people can learn from merely reading words, the learning can be enhanced by combining words and pictures into a multimedia state. His theory proposed three key assumptions for multimedia learning: (a) People process audio information and visual information through different, separate channels, (b) The channels are not infinite – instead, they have a limited capacity, and (c) To learn, people must process the multimedia information effectively. It needs to be filtered, selected, organised and integrated with existing knowledge.

Although not unique to podcasts, Thorndike’s theory of Connectionism is important for adult professional development education. Thorndike (Brock, 2020) considered that students learned effectively when they could understand the connection between what they are presently learning with what they had undertaken in the past or what they will undertake in the future. Where there is a connection between present learning and the past or future helps students understand better, for example, where a professional is learning knowledge that they can apply immediately in their job to enhance their performance.

Turner (2020), suggests that despite listeners having no direct dialogue with podcast producers, engagement still occurs as “listeners may not simply be listening passively to discussions, but formulating their own perspectives on the various topics and, ideally, being inspired to pursue new areas of inquiry”.

Therefore, to use podcasts effectively in knowledge-based adult professional development, teachers need to understand different educational philosophies to ensure the technology supports, rather than hinders, their students’ learning.

Studies of Podcasts as Educational Tools

Podcasts have been tested as a flipped classroom tool to replace traditional in-class lectures among adult students undertaking surgery clerkships. Each week, students used the podcast at a time and place of their choosing to learn about specific content, and then attended a 50 minute face-to-face session to apply the content to case studies. Overall, students preferred the flipped classroom podcast approach and preferred it over traditional lectures. It “fostered self-directed, active learning” and “the in-class sessions were successful in facilitating application of concepts and deeper learning”. Despite this, there was no significant difference in exam performance between the podcast students and non-podcast students (Lewis et al, 2018).

A study of Canadian anaesthesia residents examined podcast use and content needs. Sixty percent of participants already used medical podcasts, with 67% utilising up to one hour of podcasts weekly, and one quarter utilising 1-2 hours weekly. There were clear content topic preferences, which varied depending on the resident’s educational needs. Respondents preferred podcasts of 5 to 15 minutes about procedural skills, journal article summaries and case presentation, and between 15 to 30 minutes for didactic lectures, but did not have a preference for audio vs video podcasts. (Matava, 2013).

Objective of the Research: Why this Research is Necessary

There are still unknown factors in how podcasts can best be used in professional development education for adult knowledge-workers.

Matava (2013), in discussing the use of podcasts amongst adult medical students, noted that “a major limitation of achieving and maintaining high user rates in podcasting is the development of high quality content that *matches the needs of the targeted user group*” (emphasis added).

Drew (2017) suggests that some educators view podcasts as “supplementary to real learning”, such as in-person classes, as a way to protect and promote the existence of “real learning”. He considers this approach can detract from “considering ways podcasts might act as ‘cognitive tools’ in their own right which might be used to assist students to more deeply engage with learning content”.

Turner (2020) suggests that podcasts have “several professional development benefits for listeners” and can address “gaps in professional knowledge”. He suggests that “the accessibility, familiarity, and regularity of podcast recordings make them a sustainable

platform for providing stimulating introductions to areas of research which may lead to more extensive investigation” by professionals.

This research seeks to expand on the sentiments of Turner (2020) and others to address how podcasting can be used to meet the needs of knowledge-workers undertaking professional development education, and seek an understanding of their educational podcast preferences. It considers the effectiveness of podcasting as a potential professional development tool for Australian knowledge workers.

Scientific and Social Relevance

The research undertaken was small in scale, collecting data from ten interviewees and 75 online survey respondents which represents only a small proportion of knowledge workers in Australia.

The relevance of the study is to consider what knowledge workers want, and how podcasts can be designed to compensate for secondary tasks, the absence of visuals (e.g. no PowerPoint slides) and the unique format that is different to traditional teaching devices students are more familiar with.

This is relevant for knowledge workers, their employers, and educational providers to understand to maximise the potential of podcasting for educational purposes, minimise the risk of utilising practices that encourage unmet learning objectives, and provide further guidance on good practice and opportunity for further research into this area.

Research Questions

The research questions being considered in this thesis are:

RQ1. What are the experiences of Australian knowledge workers currently engaging with podcasts?

RQ2. What do Australian knowledge workers want in a podcast (for example, format and design) for it to be effective as a professional development tool?

RQ3. Do Australian knowledge workers who prefer podcasting as a professional development tool have specific learning style?

Methods

This chapter will examine the methodology used for this research. It will cover who participated in the study, the type of information sought, what data was collected, how the data was collected, and how the data was analysed.

Research Design

The research design methodology, data, and analysis are discussed in this chapter. A quantitative research design was used. Criteria based convenience sampling was used in the research.

The study instruments used were interviews and questionnaire surveys. Interviews were conducted with participants through videoconference. Surveys were conducted online. These research tools were chosen due to current social distancing requirements, low cost, and the ability to reach a moderate number of participants in a short period. Ten respondents participated in interviews and 75 respondents participated in the survey.

Both the survey and interviews were designed to collect the information needed for this study and were aimed at professional working adults in Australia. Potential participants were screened prior to inclusion to ensure they met two key criteria: (a) that they self-identified as meeting the definition of a ‘knowledge worker’ and (b) that they listened to at least three podcasts per week, each week, in the preceding one month of the screen – that is, they were regular podcast listeners.

The questions for both tools are in the Appendix. Briefly, however, the question themes focused on:

- (a) Current podcast usage including the platform used, shows listened to, reasons for listening, and secondary activities undertaken.
- (b) Preferences regarding duration, format and elements such as sound quality and inclusion of advertising, and preference of podcasts compared to other educational tools.
- (c) Their CPD requirements and current or future use of podcasts for CPD.
- (d) Perceived benefits and disadvantages of using podcasts for CPD.
- (e) The respondent’s learning style (which was identified by the interviewer based on feedback the interviewee provided)

The interview allowed respondents to provide deeper answers and experiences for each of the questions.

Population

The subjects of the study were adult professionals working in Australia who self-identified as knowledge workers and who regularly listened to podcasts in the preceding month.

Respondents worked in the knowledge careers of accountants, consultants, lawyers or policy advisors. The length of time working as a knowledge worker varied, but all had been

employed in these kinds of roles for at least two years. The longest had worked in a knowledge-based role for 16 years.

All participants who were accountants or lawyers had a formal CPD requirement which had slight time and format variations depending on which state they lived in, as each state's relevant professional body had their own framework.

There was a total of 85 participants: 10 participants in the interviews and 75 participants of the online survey. Persons who participated in the interview did not participate in the survey and vice versa.

Table 1: Study Population Demographic Variables

Variable	Frequency	Percentage %
<i>Participant's occupation</i>		
Accountant	20	24%
Consultant	16	19%
Lawyer	23	27%
Policy Advisor	26	30%
<i>Total</i>	85	100%
<i>Participant's age in years</i>		
27	8	9%
28	4	5%
29	2	2%
30	2	2%
31	3	4%
32	7	8%
33	9	11%
34	2	2%
35	9	11%
36	3	4%
37	2	2%
38	5	6%
39	0	0%
40	8	9%
41	4	5%
42	14	16%

43	3	4%
Total	85	100%
<i>Participant's gender</i>		
Male	44	52%
Female	41	48%
Total	85	100%
<i>Whether participant has a disability that affects learning</i>		
Yes	4	5%
No	81	95%
Total	85	100%

Sample & Sampling

A partial convenience sample and random sample were used. Initially, four participants for the interview were identified through professional contacts of the interviewer and a further eight people were identified through the initial participants advertising the study through their professional networks, with six of these latter people becoming interview participants (that is, two declined to participate after discussing the study with the researcher and are not interview participants).

Details of the survey and a link to participate was provided to six organisations who were in the professional network of the researcher, and these details were provided to professional staff for voluntary participation.

All interviews were conducted between 1 February 2021 and 12 March 2021, and all surveys were undertaken between 1 February 2021 and 2 April 2021.

Data Gathering Procedure

Two data gathering procedures were used – videoconference interview and online survey. Both instruments were developed to support the gathering of data needed for the research and were discussed with the supervisor before being used. The questions, interview structure, and survey structure were discussed with a local university lecturer in Australia with expertise in doctorate level research structuring.

The instruments are considered valid and reliable, and measure the constructs intended to measure.

Data Analysis Procedure

Interview responses were transcribed and analysed through categorising and coding of answers for each question to identify themes, similarities and differences between respondents, to identify key preferences for podcast design.

Both the interview coded answers and online survey responses were inputted into Microsoft Excel and Access, and these programs used to analyse and identify similarities, differences, averages, highs and lows, anomalies, and trends among the responses.

Results

Respondents' Current Podcast Usage

All survey respondents were regular podcast listeners. Respondents were asked to identify which programs they used to listen to podcasts and were able to identify more than one program. Spotify was the most frequently used podcast programme with more than nine in 10 (93%) respondents accessing it. Apple Podcasts was the second most frequently used programme at 85%. Audible (38%) and Google Podcasts (35%) were used by roughly one third of respondents. Network apps (those apps which play podcast shows from the same network, similar to a television channel) (26%), websites (28%), and other programs or apps (25%) were used by around one quarter of respondents.

Respondents reported that they currently listened to podcasts for entertainment (69%), general knowledge learning unrelated to their job (47%), learning related to their job (38%), and for news and current affairs (73%). Most respondents (52%) did not use show notes from podcasts. Show notes are typically short informational notes that accompany a podcast which provide additional information, such as website links to access or download additional information mentioned in the show.

All respondents undertook a secondary activity when listening to podcasts. Respondents reported that they exercised (56%), drove (35%), did household chores (40%) or did other activities (5%). Half of respondents (51%) considered their secondary activities required low concentration, while a third (35%) considered they required medium concentration, and 14% considered it required high concentration.

Table 2: Current Podcast Usage Responses ($n=85$)

Questionnaire question	Frequency	Percentage%
<i>What program do you use to listen to podcasts?</i>		
Spotify	79	93%
Apple Podcasts	72	85%
Google Podcasts	30	35%
Audible	32	38%
Network apps	22	26%
Websites	24	28%
Other	21	25%
<i>What are your reasons for listening to podcasts?</i>		
Entertainment	59	69%
General learning	40	47%
Job related learning	32	38%
News and current affairs	62	73%
<i>Do you use show notes of podcasts?</i>		
Yes	31	36%
No	44	52%
Skipped question	10	12%
<i>What secondary activities do you undertake while listening to podcasts?</i>		
Exercising	48	56%
Commuting	30	35%
Household chores	34	40%
Other	4	5%
<i>What do you perceive the concentration effort to be for these secondary activities?</i>		
Low	43	51%
Medium	30	35%
High	12	14%

Using Podcasts for Improving Work Knowledge

Half of the respondents (51%) reported that their job had a formal CPD requirement. Of these requirements around half (47%) related to undertaking CPD of a specific number of hours

throughout the year. Most respondents (58%) did not currently listen to podcasts for their job. However almost all (91%) said they do, or would, use podcasts for CPD if this were permitted by the CPD rules.

Table 3: Using podcasts for improving work knowledge ($n=85$)

Questionnaire question	Frequency	Percentage%
<i>Does your job have a formal CPD requirement?</i>		
Yes	43	51%
No	37	44%
Unsure	5	6%
Total	85	100%
<i>If yes, what are the formal CPD requirements?</i>		
Time duration	40	47%
Frequency	12	14%
Other	5	6%
<i>Do you currently listen to podcasts for your job?</i>		
Yes	36	42%
No	49	58%
Total	85	100%
<i>Do you, or would you, use podcasts for CPD if permitted by the CPD rules?</i>		
Yes	77	91%
No	0	0%
Undecided	8	9%
Total	85	100%

Preferred Elements of Podcasts

Respondents were asked about their preferred elements of podcasts. Three quarters (73%) of respondents preferred podcasts that were less than 30 minutes in duration with podcasts of 10 minutes to 19 minutes being slightly more popular (39%) than podcasts of 20 minutes to 29 minutes (34%). One quarter of respondents (25%) preferred podcasts of one hour in length.

Most respondents (54%) considered it was important for the speaker to establish their credibility (for example by announcing their credentials to be providing information to the

listener about the topic) however a third of respondents (31%) were undecided or did not consider it important.

Respondents were asked whether they liked or disliked certain podcast formats. Highly scripted podcasts (41% liked) and interview style podcasts (46% liked) were fairly split between respondents who liked them and disliked them. Respondents more strongly liked conversational style podcasts (66%) than disliked them.

In terms of specific elements of podcasts, respondents liked the ability to submit questions (35%), having a speaker with an understandable voice (91%), preferred podcasts with multiple speakers (80%) rather than solo speakers (45%), the use of interviews (67%), having clear sound quality (89%), and podcasts which could be listened to individually (standalone podcasts) (51%), and podcasts which were part of a series (60%).

More than half of respondents (59%) disliked the use of music in podcasts though 41% liked the inclusion of music. Two thirds of respondents (66%) disliked advertising in their podcasts. Respondents were fairly evenly split on whether they liked podcasts which had been converted from another format for example when a webinar's audio track was converted into a podcast (39% liked, 31% disliked, and 31% undecided).

Table 4: Preferred elements of podcasts ($n=85$)

Questionnaire question	Frequency	Percentage%
<i>What is your preferred time duration of podcasts?</i>		
< 10 minutes	0	0%
10 to 19 minutes	33	39%
20 to 29 minutes	29	34%
30 to 39 minutes	2	2%
40 to 49 minutes	0	0%
50 to 59 minutes	0	0%
One hour	21	25%
More than one hour	0	0%
Total	85	100%
<i>Is it important for the speaker to establish their credibility?</i>		
Yes	46	54%
No	13	15%

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Undecided	26	31%	
Total	85	100%	
	Like	Dislike	Undecided
<i>What is your preferred format of podcast?</i>			
Highly scripted	41 (48%)	36 (42%)	8 (9%)
Interview style	39 (46%)	39 (46%)	7 (8%)
Conversational style	56 (66%)	22 (26%)	7 (8%)
<i>Do you like or dislike these elements of podcasts?</i>			
Ability to submit questions	30 (35%)	23 (27%)	32 (38%)
Understandable voice	77 (91%)	0 (0%)	8 (9%)
Solo speaker	38 (45%)	30 (35%)	17 (20%)
Multiple speakers	68 (80%)	12 (14%)	5 (6%)
Interviews	57 (67%)	16 (19%)	12 (14%)
Music	35 (41%)	50 (59%)	0 (0%)
Clear sound quality	76 (89%)	1 (1%)	8 (9%)
Advertising	11 (13%)	56 (66%)	18 (21%)
Converted from another format (e.g. webinar)	33 (39%)	26 (31%)	26 (31%)
Standalone podcast	43 (51%)	13 (15%)	29 (34%)
Podcast series	51 (60%)	1 (1%)	33 (39%)

Podcast Usage Preferences

Respondents identified several benefits of using podcasts for CPD. These included convenience (73%), free or lower cost (80%), the ability to repeat the podcast (78%), the ability to do a secondary activity at the same time (85%), and access to a wide range of experts that they would not have been able to access in person.

The perceived disadvantages of using podcasts for CPD included a lack of networking (51%), the inability to ask live questions (41%), and a preference for seeing visuals during learning (40%). almost four in 10 respondents perceived there were no disadvantages of using podcasts for CPD (38%).

Respondents were asked whether they would prefer a podcast compared to four other typical CPD formats. Respondents only preferred a podcast over a recorded webinar (65%). In all other instances Chris, respondents preferred the alternative, including a live webinar

Using Podcasts in Professional Development: Preferences of Australian Knowledge Workers (40%), a live in-person session with their work colleagues (38%), or a live in-person session with their community of practise (34%).

Table 5: Podcast usage preferences ($n = 85$)

Questionnaire question	Frequency	Percentage%
<i>What do you perceive as the benefits of using podcasts for CPD?</i>		
Convenience	62	73%
Free or lower cost	68	80%
Able to repeat	66	78%
Able to do secondary activity	72	85%
Access to wider range of experts than in-person	33	39%
Other	14	16%
There are no benefits	0	0%
<i>What do you perceive as the disadvantages of using podcasts for CPD?</i>		
Lack of networking	43	51%
Unable to ask live questions	35	41%
Prefer seeing things	34	40%
Other	19	22%
There are no disadvantages	32	38%
<i>I would you prefer a podcast compared to ...?</i>		
A live webinar	34	40%
A recorded webinar	55	65%
A live in-person session with my work colleagues	32	38%
A live in-person session with my community of practise	29	34%

Other Qualities of Respondent

Half of respondents [51%] identified as having an audio learning style. Around 4 in 10 [39%] identified as having a visual learning style, while 11% identified having a kinaesthetic learning style.

When commuting, 28% were a driver only and 55% were a passenger only, while 16% had a commute in which they were partly a driver and partly a passenger (e.g. they drove their car to the train station then rode the train the balance of the journey to work).

The majority of respondents had good or very good familiarity with various training methods for a student's perspective. Three of respondents were familiar or very familiar with live webinars [12% and 64% respectively]. Almost all respondents were familiar or very familiar with pre-recorded webinars or lectures [19% and 78% respectively]. Most respondents were familiar or very familiar with live in-person small classes such as tutorials [13% and 73% respectively]. Similarly, 11% of respondents were familiar and 79% of respondents were very familiar of live in person large classes or lectures.

Table 6: Other qualities of respondent ($n = 85$)

Questionnaire question	Frequency	Percentage%			
<i>What is your learning style?</i>					
Audio	43	51%			
Visual	33	39%			
Kinaesthetic	9	11%			
Total	85	100%			
<i>When commuting, what is your role?</i>					
Only the driver	24	28%			
Only a passenger	47	55%			
Partly a driver and partly a passenger	14	16%			
Total	85	100%			
	Very good	Good	Neutral	Bad	Very bad
<i>What is your familiarity with these training methods as a student?</i>					
Live webinar	54 (64%)	10 (12%)	21 (25%)	0 (0%)	0 (0%)
Pre-recorded webinar or lecture	66 (78%)	16 (19%)	3 (4%)	0 (0%)	0 (0%)
Live in-person small class	62 (73%)	11 (13%)	12 (14%)	0 (0%)	0 (0%)
Live in- person large class or lecture	67 (79%)	9 (11%)	9 (11%)	0 (0%)	0 (0%)

Discussion

The research questions being considered in this thesis are:

RQ1. What are the experiences of Australian knowledge workers currently engaging with podcasts?

RQ2. What do Australian knowledge workers want in a podcast (for example, format and design) for it to be effective as a professional development tool?

RQ3. Do Australian knowledge workers who prefer podcasting as a professional development tool have specific learning style?

Current Experiences of Using Podcasts

All of the research participants were especially chosen because they were regular podcast users. This was in order to find out the preferences of real podcast users. By and large, most of the knowledge workers participating in the research used smartphone apps such as Spotify or apple podcasts to listen to their podcasts, and did so mainly for news and current affairs and entertainment, while some used podcasts for work purposes. In interviews, respondents explained that ease of access was a key consideration. Most preferred to use podcasts hosted on a “agnostic” podcasting platform, such as Spotify or Apple Music, where all of their podcasts and music could be housed together regardless of the creator. The functionality of these platforms was also important, including the ability to download the podcast for listening while not connected to the internet, and ability to speed up or slow down the podcast.

It was extremely common for knowledge workers to be undertaking a secondary activity while listening to a podcast and most of the time, these activities were perceived to need low concentration though some required a medium level of concentration. In the interviews a respondent noted that listening to podcasts while undertaking low concentration tasks such as running for exercise, helped her avoid the monotony and boredom of the task. Similar sentiments were received from other interview respondents in regards to commuting, particularly as a passenger rather than a driver. Several knowledge worker job types, particularly lawyers and accountants, are perceived as having busy and time intensive jobs. Therefore the ability to undertake CPD whilst also undertaking a secondary yet boring activity would seem to be a benefit of podcasts.

Respondents tended to seek to match their activity time to particular podcasts. For example, multiple interviewees listened to one longer podcast during longer tasks, such as a planned commute or planned run, rather than multiple shorter podcasts during the one task. Feedback from respondents included that: it was less hassle to listen to a longer podcast

Using Podcasts in Professional Development: Preferences of Australian Knowledge Workers rather than stop during a run to navigate to a new podcast or to make a playlist beforehand, and it was more desirable to be able to listen to a podcast in its entirety in one session rather than stop part way through and attempt to re-commence it later.

Around half of the respondents worked a job which had a formal CPD requirement and this requirement generally related to the need to undertake a certain number of CPD hours each year in order to maintain their practising credentials. Although all participants listened to podcasts, and almost all wanted to listen to podcasts for CPD, most did not currently take advantage of podcasts to fulfil CPD requirements. This presents an opportunity to promote the use of podcasts and encourage relevant educational podcasts to be created in order to access a podcast listening audience that is willing to be engaged.

What Knowledge Workers Want: Preferences in Podcasts

However, it is important that podcasts meet the expectations of their listening audience. In interviews, some knowledge workers explained why they did not currently use podcasts for CPD. One respondent noted that a government department who produced technical podcasts would often convert educational material created for other purposes, such as visual webinars or in-person conferences, into audio podcasts. The respondent considered the audio was often lacking due to the speakers referring to visual elements the listener could not see.

There was not a clear cut answer to what the ideal duration is for a CPD podcast. Although three quarters of respondents wanted a podcast of under 30 minutes duration, there is a big difference between wanting a 10 minute podcast and a 30 minute podcast. There also appeared to be a cohort which enjoyed longer one hour podcasts. In interviews one respondent explained that longer well scripted and performed podcasts were enjoyable and could be riveting to listen to however wondered if this was possible with “drier” professional or technical content. Longer podcasts were typically for entertainment purposes or deep documentary style content.

There was also variety in what is the preferred format for a podcast. All of the identified formats being highly scripted, interview style, and conversational style, are all relevant for use in CPD education. One respondent in the interview noted that interview style is very similar to panel discussions undertaken at in person conferences, and therefore they find them familiar. Interviewees who preferred highly scripted podcasts believed these would be ideal for CPD because it avoided some of the pitfalls of interview style and conversational style, namely the logical and thought through format of a highly scripted podcasts avoids poorly structured lessons and does not require the student to identify errors made by those speaking in a more casual situation. A highly scripted podcast, or indeed a well edited

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podcast, can restructure a confusing interview or conversation into a more logical learning experience and remove incorrect or misleading information that may have been accidentally said during a casual conversation recording.

The elements of podcasts which knowledge workers liked and disliked did not seem to be uncommon two podcast listeners generally. Having a clear understandable voice and good quality sound were very important. In interviews, a respondent noted that even an interesting podcast can be let down when the sound quality is low, for example where the sound is not in stereo or it is evident it is not recorded in a professional setting. Advertising was not favoured, however in interviews, respondents understood the need for advertising to be included as a revenue stream for podcasters. Positively, both standalone podcasts and podcast series were both popular for knowledge workers. This means that a person recording CPD podcasts is not limited to one over the other and may make episodes as needed, whether this is a one off or a series of varying length.

The nature of podcasts however, does lead to some unavoidable disadvantages. It is not possible to recreate networking with colleagues for visuals in an audio podcast that is pre-recorded. This may have influenced the answers to respondent's preferences for a podcast compared with other learning methods. A podcast was only preferable to a recorded webinar. Live in person sessions with work colleagues or their community of practise were popular compared to podcasts. Therefore, it is unlikely that podcasts for CPD board replace other formats, but would complement them, particularly given their low cost, ability to be repeated, and ability for listeners to undertake a secondary activity.

Learning Styles of Knowledge Workers

To participate in the interviews and online survey, participants were required to be those who currently used podcasts. Their learning style was identified as one of three styles: visual, audio, or kinaesthetic. Unsurprisingly most respondents were audio learners.

Implications for Research

This study has provided some information on aspects of the use of podcasts in professional development for knowledge workers. It is suggested that additional research with a wider focus may be beneficial in order to develop additional understanding of podcast users' experiences, preferences, and learning habits, and of those who do not regularly (or at all) listen to podcasts. In particular, the following ideas for future study are suggested:

1. A study with an increased number of participants, and restricted to individual knowledge

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worker job classes such as only lawyers, or only accountants, to test whether there are specific challenges or requirements that are job specific, rather than apply more broadly to knowledge workers in general. This would help ensure that no unnecessary elements are included which may hinder the effectiveness of educational podcast usage.

2. Sentiment from knowledge workers who do not currently listen to podcasts around the potential adoption of podcasts for educational purposes. For example, are there barriers that currently exist which deter them from utilising podcasts for educational purposes? How can these barriers be overcome?

Limitations of the Study

The results hope this research paper should be considered in light of some of the limitations of the study. There are a number of key limitations in this paper which could be addressed in future studies.

First the number of participants included in the interviews and surveys is limited, due in Part 2 a desire to only include those who were familiar with podcasts and used them regularly in order to gain insights into what makes a good podcast from the perspective of a genuine user. The number of knowledge workers in Australia is unknown however is considered to be large considering the nature of job categories which come within the scope of knowledge work.

Secondly, the advent of the 2020 coronavirus pandemic is likely to have an impact on the future of work. Importantly, many survey and interview respondents listened to podcasts while commuting to work. Since the pandemic commenced, there has been a dramatic and significant shift towards working from home where no commute is necessary. Some respondents listen to podcasts while undertaking a secondary activity to minimise the monotony. Without a commute which requires alleviation from boredom, will podcast usage be affected?

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Author's declaration

I hereby declare that I have written this thesis independently and that all contributions of other authors and supporters have been referenced. The thesis has been written in accordance with the requirements for graduation theses of the Institute of Education of the University of Tartu and is in compliance with good academic practices.

Signature:



Date: Saturday 5 June 2021

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Appendix 1**Interview and Online Questionnaire Used for This Study**

1. What are your reasons for listening to podcasts?
2. What secondary activities do you undertake while listening to podcasts?
3. What do you perceive the concentration effort to be for these secondary activities?
4. Do you use show notes of podcasts?
5. Does your job have a formal CPD requirement?
6. If yes, what are the formal CPD requirements?
7. Do you currently listen to podcasts for your job?
8. Would you use podcasts for CPD if permitted by the CPD rules?
9. What is your preferred time duration of podcasts?
10. Is it important for the speaker to establish their credibility?
11. What is your preferred format of podcast?
12. Do you like the ability to submit questions to the podcast host to be answered in the podcast?
13. Do you like or dislike these elements of podcasts?
 - (a) Able to repeat
 - (b) Able to do secondary activity
 - (c) Access to wider range of experts than in-person
 - (d) Other
 - (e) There are no benefits
14. What do you perceive as the benefits of using podcasts for CPD?
 - (a) Lack of networking
 - (b) Unable to ask live questions
 - (c) Prefer seeing things
 - (d) Other
 - (e) There are no disadvantages
15. What do you perceive as the disadvantages of using podcasts for CPD?
16. Which would you prefer? Assume all of these sessions are the same time duration.
 - (a) A podcast or a live webinar?
 - (b) A podcast or a recorded webinar?
 - (c) A podcast or a live in-person session with your work colleagues?
 - (d) A podcast or a live in-person session with your community of practise?

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17. What is your learning style?
18. What is your gender?
19. What is your age?
20. What is your job?
21. How many minutes is your commute one way?
22. When commuting, what is your role?
 - (a) Only the driver
 - (b) Only a passenger
 - (c) Partly a driver and partly a passenger
23. What is your familiarity with these training methods as a student?
 - (a) Live webinar
 - (b) Pre-recorded webinar or lecture
 - (c) Live in-person small class
 - (d) Live in- person large class or lecture
24. Do you have a disability that is relevant to learning?

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