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## An Investigation of Teachers' Awareness and Willingness to Engage with a Self-Directed Professional Development Package on Gifted and Talented Education

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## **An Investigation of Teachers' Awareness and Willingness to Engage with a Self-Directed Professional Development Package on Gifted and Talented Education**

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*Abstract: Despite recognising the importance of educators in meeting the needs of gifted and talented students, research indicates that teachers often lack the essential knowledge, skills and confidence to identify and meet the needs of gifted and talented students. Evidence suggests this lack of preparation may be related to teachers' professional development. This quantitative study of 96 primary school teachers aimed to provide an initial insight into the knowledge and uptake of the 2005 DEST/GERRIC Gifted and Talented Education Professional Development Package for Teachers. It further aimed to give some insight into teachers' opinions and behaviours as it pertains to this mode of professional development. Results suggest a lack of knowledge and uptake of this professional development package, despite an overwhelming willingness to undertake this mode of professional learning in gifted and talented education. Implications and recommendations conclude the paper.*

### **Introduction**

Access to, and completion of, gifted and talented education for teachers has traditionally been seen as optional rather than mandatory. Yet educators are expected to identify and cater to gifted and talented students as part of an inclusive approach to education. The term 'gifted and talented', as defined by Gagné's Differentiated Model of Giftedness and Talent (2008), refers to students who have exceptional potential (gifted) and/or performance (talent) in one or more domains of human ability (e.g., intellectual, creative, psychomotor; Gagné, 2008). Importantly, gifted and talented students are found in both specialised and mainstream classrooms (Braggett & Moltzen, 2000; Taylor & Milton, 2006), thus requiring all educators (not just those delivering dedicated gifted and talented programming) to understand how to design and deliver appropriate educational experiences for these students. This is most notably because gifted and talented students often have unique cognitive, affective and social needs compared to their non-gifted peers (Shaywitz, Holahon, & Freudenheim, 2001; Tomlinson, 2005). Specifically, research demonstrates that these students are often cognitively and affectively more advanced than their same-aged peers (Maker & Schriever, 2010; Plunkett & Kronborg, 2011; Shaywitz, Holoahn & Freudenheim, 2001; Tomlinson, 2005). This may

include proficiency in early language development, enhanced curiosity and a predilection for independence (Silverman, 1993; Vialle & Rogers, 2009). These students have also been found to be more persistent in areas of interest, display developmentally advanced memory skills and exhibit superior information processing skills relative to their non-gifted peers (Schriever & Maker, 2003; Taylor & Milton, 2006; VanTassel-Baska, 2003). Nevertheless, it is important to recognise that these students are not a homogeneous group and that their characteristics, abilities and needs are individualistic and varied amongst these students (Davis & Rimm, 2010; Harris & Hemmings, 2008).

When considering the unique characteristics and needs of gifted and talented students, it is clear that teachers play a central role in the academic success (or failure) of these students. In fact, a central tenet in Gagné's (2003, 2010) Differentiated Model of Giftedness and Talent is that interpersonal and environmental catalysts contribute (positively and negatively) to the development of gifts (potential) into talents (performance). From this perspective, teachers are positioned as a vital facilitator for ensuring that gifted and talented students' educational needs are met. Yet the pervading belief of many educators is that gifted and talented students are already academically advantaged and will achieve even without any teacher intervention (Colangelo, Assouline & Gross, 2004; Gallagher, 2003; Lassig, 2009; Megay-Nespoli, 2001; Taylor & Milton, 2006; VanTassel-Baska, 1997). Research shows this to be a myth (albeit a widely accepted one), instead showing that gifted and talented students are unlikely to achieve on their own (DeBuhr, 2011; Parliament of the Commonwealth of Australia, 2001; Plunkett, 2002). To illustrate, the 2001 Senate Inquiry on the Education of Gifted and Talented Children (Parliament of the Commonwealth of Australia, 2001) estimated that up to 75 percent of gifted students underachieve in school and 40 percent leave school before completing year 12. Research further supports the significant impact of educators on the development, learning, engagement and achievement of these students (Lassig, 2002; McCoach, 2007; Plunkett, 2002; Rogers, 2007). It is therefore crucial for educators to be mindful of their pedagogy and practices and the way in which they may contribute to the benefit or neglect of gifted and talented students' educational, social and emotional needs (Hudson, Hudson, Lewis & Watters, 2010; Vialle & Quigley, 2002).

## Literature Review

Despite formal recognition of the importance of educators for meeting the needs of gifted and talented students (e.g., MCEETYA, 2008), and the implementation of measures to support educators in these aims (NSWDET, 2004a, 2004b, 2004c, 2004d, 2004e, 2004f, 2006), research continues to indicate that teachers often lack the essential knowledge, skills and confidence to identify and meet the needs of gifted and talented students (Hudson et al., 2010; Taylor & Milton, 2006; Troxclair, 2013). There is mounting evidence that this lack of preparation (whether genuine or perceived) is related to teachers' professional development at both preservice and inservice levels. For instance, Kagan (1992) indicates that undertaking specialised education can challenge teachers' beliefs (e.g., the common misconceptions about gifted and talented students). Rowley's (2012) analysis of inservice professional learning policy and practices in Australia and America found similarly positive effects of teacher education on moulding teachers' attitudes, perceptions and practices (see also Adams & Pierce, 2004; Berman, Schultz & Weber, 2012; Gallagher, 2007; Hativa, Barak & Simi, 2001; Kronborg & Plunkett, 2012; Lassig, 2009). Similarly, Lassig's (2009) survey of 126 Australian

primary school teachers found that professional development had positive impacts on teacher attitudes toward gifted and talented education, with flow-on effects for classroom practices and gifted and talented student outcomes. However, research also reveals that this form of professional development remains insufficient in the area of gifted and talented education (Commonwealth of Australia, 1988, 2001; Rowley, 2012; Taylor & Milton, 2006), with few improvements being made (Fraser-Seeto, Howard & Woodcock, 2013; Kronborg & Moltzen, 1999; Taylor & Milton, 2006). This is highly problematic given the established influence that teachers have on meeting the needs and maximising the educational outcomes of gifted and talented students (Gagné, 2003).

The notion that our gifted and talented students require improved conditions to ensure the quality of their education is not a novel one. For instance, in 1986 an Australian government inquiry was undertaken to investigate the suitability and relevance of the current policies and programs for gifted and talented students (Parliament of the Commonwealth of Australia, 1988). From this Inquiry, nine recommendations were made (Parliament of the Commonwealth of Australia, 1988). These recommendations placed an explicit focus on special education provisions and the issue of teacher preparation in gifted and talented education. Despite formally acknowledging the significance of preservice and inservice teacher professional learning in gifted and talented education, this report failed to gain the support of critical government bodies, resulting in none of the recommendations being formally implemented (Kronborg, 2002; Vialle & Rogers, 2009). In 2001, the subsequent Australian Senate Inquiry on the Education of Gifted and Talented Children (Parliament of the Commonwealth of Australia, 2001) again investigated the state of provisions for gifted and talented students. Findings from this inquiry indicated that current gifted and talented education provisions and practices remained a concern throughout Australia, and that education systems were regularly failing gifted and talented students. Specifically, the report concluded that gifted and talented students were regularly experiencing boredom, frustration, psychological distress and underachievement. The report further highlighted teachers' often-negative attitudes and misconceptions of gifted and talented students as a significant problem in this regard (attributed to a lack of expertise, confidence and supporting resources – an assertion that is supported by research evidence; Gross, 1994; Lassig, 2009). As a way to address these issues, the Inquiry made 20 recommendations, with a notable emphasis on teacher education (i.e., nine recommendations relating to preservice and inservice teacher education in gifted and talented education and 11 focusing on the development of national strategies and curriculum support to improve gifted and talented educational provisions).

In one of only a few actions resulting from these recommendations, the Australian Federal Government (in conjunction with the New South Wales Department of Education and Training) developed and disseminated the *Gifted and Talented Education Professional Development Package for Teachers* (Gross, MacLeod, Bailey, Chaffey, Merrick & Targett, 2004). This professional development package consisted of six individual modules that aimed to provide teachers with access to specialised learning to enable them to identify gifted and talented students, differentiate the curriculum and respond to these students' learning needs (Gross et al., 2004). Upon its completion in 2005, this professional development package was circulated to all Australian government schools and remains accessible online through the Department of Education, Employment and Workplace Relations website, and as such can be considered a self-directed professional development package. Self-directed learning can be considered as “professional development arising from the teachers' own initiative”

(Mushayikwa & Lubben, 2009, p. 367) and is a viable avenue for educators to explore alternate practices in teaching (Minot, 2010; Slavit & Roth McDuffie, 2013). Initial professional education to support staff in using the professional development package was provided in 2005 to a limited number of teachers from both primary and secondary schools, with the remaining educators and schools expected to access and undertake the package without supplementary support (Wormald, 2005). However, the awareness, uptake and impact of this professional development package remains unclear, with no published research having investigated these issues.

An investigation of these issues would generate important data regarding the awareness, uptake and impact of this recent (and large-scale) effort to improve teacher education in gifted and talented education in Australia, as well as provide important insights into teachers' opinions and behaviours as it pertains to this mode of professional development. As such, the current study sought to obtain initial data regarding inservice teachers' knowledge and use of the Gifted and Talented Education Professional Development Package for Teachers (Gross et al., 2004), with the additional aim of providing some insight into the contributions that support packages are making in the field of gifted and talented education.

## **Methods**

### **Participants**

Participants were inservice primary teachers from schools within a rural NSW region. Inservice teachers for this study refer to qualified teachers currently working within the public primary school system, educating students from Kindergarten to Year 6. To recruit participants, 15 primary schools were selected at random from the 228 schools in the region. This was done by a random sampling process whereby 10 schools were drawn to make up the initial contact list, with five more placed on a reserve list, with the intention of recruiting a sample of approximately 100 participants (the sample size advocated for representing each major subgroup in the population; Cohen, Manion, & Morrison, 2009). This invitation to participate was subsequently extended to teachers at the five reserve schools due to an insufficient response rate. Exhaustion of these initial 15 schools required approaching an additional nine randomly selected schools.

In total, 96 inservice teachers from 10 schools returned a completed survey (representing a response rate of 47.7%). The majority of participants from the final sample were female (79.2%). This is in line with current trends that suggest 80.8% of primary school teachers in the public sector are female (ABS, 2012). Participants' years of service ranged from 2 years to 36 years ( $M = 15.94$ ,  $SD = 9.18$ ).

### Data Collection Instrument

A questionnaire was purposefully designed for this study to investigate inservice teachers' awareness and use of the Gifted and Talented Education Professional Development Package for Teachers (Gross et al., 2004). The survey (see Table 1 for overview) was modelled on an existing survey used to investigate the knowledge and impact of a comprehensive document on the benefits of academic acceleration (i.e., *A Nation Deceived*; Colangelo & Belin-Blank Centre for Gifted Education, 2007). Modification of this survey involved minor revisions to 12 established survey questions. These questions explored inservice teachers' knowledge of the professional development package (e.g., 'Are you aware of the existence of the 2005 Gifted and Talented training package?') and uptake of the professional development package (e.g., 'Have you ever completed all, or part, of the 2005 Gifted and Talented training package to increase your knowledge and skills'), as well as other supports available for gifted and talented students. Questionnaire items were seven categorical questions (e.g., yes/no), five statements rated on a 5-point Likert scale (rated 0 to 4), and two open-ended response options in which participants could expand on their opinions.

### Procedure

Initial ethics approval was sought and granted from participating institutions in order to conduct research with human participants. Copies of ethics approval along with information sheets outlining the study and surveys were distributed to all participating schools. Data collection typically occurred within participating primary schools, with distribution occurring at staff meetings, through staff pigeon-holes and via electronic delivery to NSW Department of Education and Communities (NSW DEC) email addresses. Survey completion occurred at the convenience of participating teachers. A timeframe of 2 to 3 weeks was given to complete and prepare the surveys for collection. Completed surveys were physically collected from the majority of schools, with one school opting for electronic return via email and another opting to mail completed surveys. Returned surveys were then numerically coded for anonymity and ease of collation and these data were tabulated for input into Statistical Package for the Social Sciences software. Descriptive statistics (i.e., measures of central tendency, frequencies, proportions) and non-parametric analyses (i.e., chi-square) were used to analyse participants' responses.

### Results

Descriptive statistics of survey responses are provided in Table 1. Survey responses indicated that a majority of respondents (76.0%;  $n = 73$ ) had taught a student identified as gifted and talented. In fact, 30.2% ( $n = 29$ ) indicated that there currently were identified gifted and talented students within their classroom. A total of 63.5% ( $n = 61$ ) indicated the presence of gifted and talented students in their school, inclusive of those who indicated these students were present in their classrooms. However, 60.4% of respondents ( $n = 58$  participants) indicated that there was neither a formal gifted and talented policy nor a gifted and talented coordinator at their school. Only 33.3% of participants ( $n = 32$ ) identified their school as having both. Of the remaining participants, 2.1% ( $n = 2$ ) did not respond, 2.1% ( $n = 2$ ) had only a gifted and talented coordinator and 2.1% ( $n = 2$ ) had only a gifted and talented policy.

All participants indicated that professional development was important in their being able to identify and appropriately support a gifted and talented student (with 54.2% indicating 'very important' and 45.8% indicating 'somewhat important'). Despite the overwhelming sentiment for the importance of professional development, only 51.0% of participants ( $n = 49$ ) had undertaken some form of professional development in gifted and talented education in their career. Of those who had engaged in professional development, 87.2% ( $n = 41$ ) indicated that this had occurred at the inservice level. Only 15.2% ( $n = 7$ ) indicated that they had undertaken professional development in gifted and talented education as a compulsory requirement of their preservice teacher education. An additional 1.0% ( $n = 1$ ) had undertaken an elective subject in gifted and talented education as part of their preservice tertiary education.

When considering respondents' knowledge and uptake of the 2005 Gifted and Talented Education Professional Development Package for Teachers (Gross et al., 2004), the results revealed that the majority (74.0%;  $n = 71$ ) had no awareness of the professional development package. A further 17.7% ( $n = 17$  participants) had heard of the professional development package but never seen it. In fact, only 5.2% ( $n = 5$ ) of participating teachers had completed part of the package and only 1.0% had completed it in its entirety. Responses to the open-ended questions echoed that this lack of uptake was based on respondents' lack of knowledge of the package. In assessing participants' willingness to use a gifted and talented education professional development package, 92.7% ( $n = 89$ ) identified themselves as willing. Only 4.2% of respondents ( $n = 4$ ) suggested they would not be interested. All of those who indicated a disinterest were female, ranged between 12 and 35 years of teaching service and had not completed any part of the Gifted and Talented Education Professional Development Package for Teachers (Gross et al., 2004).

Likely due to the widespread lack of familiarity with this professional development package, the majority of teachers (93.8%,  $n = 90$ ) were also unable to evaluate the impact of the package on their perceptions of gifted and talented students (interpreted here as the package having no impact, from the perspective of these respondents). Of those who felt able to respond, 80.0% ( $n = 4$ ) felt that the package had a positive impact on their perceptions of gifted and talented students, whereas 20.0% ( $n = 1$ ) felt that the package had a negative impact on these perceptions. A similar pattern of results was evident in teachers' opinions regarding the impact of the professional development package on gifted and talented provisions in their school. That is, 80.2% ( $n = 77$ ) indicated that they had no opinion on the matter, likely due to the fact that most were not aware that the package exists. Of those able to evaluate its impact, 68.4% ( $n = 13$ ) felt that the package could have a positive impact if used more, 10.5% ( $n = 2$ ) indicated that the package had a positive impact on gifted and talented provisions already and 21.1% ( $n = 4$ ) indicated that the package had not served to improve provisions in their school.

**Factors Related to Teachers' Awareness and Completion of Gifted and Talented Education Professional Development Package for Teachers**

To further investigate the factors that were related to teachers' awareness and completion of the Gifted and Talented Education Professional Development Package for Teachers (Gross et al., 2004), non-parametric chi-square analyses were conducted. First investigated was the relationship of professional development (i.e., gifted and talented professional development undertaken or not undertaken) with awareness (i.e., not seen it, heard of but not seen it, know and seen it) and completion of the professional development package (i.e., none completed, partially completed, completed package). Chi-square analyses indicated that having undertaken professional development in gifted and talented education was significantly related to awareness of the package,  $\chi^2(2) = 9.05, p = .01$ , but not significantly related to teachers' completion of the package,  $\chi^2(2) = 2.80, p = .25$ . Examination of descriptive statistics indicated that teachers who had undertaken professional development in gifted and talented education were more likely to have heard of (Professional Development: 24.5%; No Professional Development: 10.6%) and have seen the package (Professional Development: 14.3%; No Professional Development: 2.1%).

Subsequent analyses investigated whether having a gifted and talented coordinator and/or gifted and talented policy was related to awareness of completion of the package. Contrary to expectations, results of chi-square analyses indicated that having at least one of coordinator or policy was not significantly related to awareness of the professional development package,  $\chi^2(2) = 1.49, p = .48$ . However, descriptive statistics indicated that those without a policy or coordinator were slightly more likely to have completed part or all of the package, (no policy/coordinator = 6.9%; those with either policy, coordinator or both = 5.6%).

Lastly, it was investigated whether having taught a gifted and talented student was significantly related to awareness and completion of the professional development package. Chi-square analyses indicated that having taught a gifted and talented student was related to teachers being more aware of the package,  $\chi^2(2) = 7.86, p = .02$ , but was not significantly associated with having completed part or all of the package,  $\chi^2(2) = 3.70, p = .83$ . Descriptive statistic indicate that teaching an identified gifted and talented student was more likely to impact teacher awareness of the package (having taught gifted and talented and being aware of the package = 32.9%; those who have not taught a gifted and talented student and were aware of the package = 4.3%).



Taught an identified GAT student		
Yes	73	76.0
No	23	24.0
Ever engaged in GAT PD		
Yes	49	51.0
No	47	49.0
Types of GAT PD undertaken		
Preservice (mandatory)	7	7.3
Preservice (elective)	1	1.0
Inservice	41	42.7
Importance of professional development in GAT education		
Very important	44	45.8
Somewhat important	52	54.2
Presence of formal GAT policy and/or GAT coordinator		
Policy & coordinator	32	33.3
Policy only	2	2.1
Coordinator only	2	2.1
Neither policy or coordinator	58	60.4
Presence of GAT students		
Yes in the classroom	29	30.2
Yes in the school	61	63.5
None in the classroom	3	3.1
None in the school.	3	3.1
Perception of impact of 2005 GAT PD Package on GAT provisions		
Significantly contributed	2	2.1
Not contributed to improvements	3	3.1
Ineffective to provisions	1	1.0
Could impact if used more often	13	13.5
No opinion	77	80.2
Awareness of 2005 GAT PD Package		
Know it and have seen it	8	8.3
Have heard of it but not seen it	17	17.7
Not seen it	71	74.0
Completion of part or all of 2005 GAT PD Package		
Completed package	1	1.0
Partially completed package	5	5.2
None completed	90	93.8
If used 2005 GAT PD Package, impact on perception of GAT students		
Positive impact	4	4.2
No impact	1	1.0
No opinion	90	93.8
Missing data	1	1.0
Willingness to undertake 2005 GAT PD Package in the future		
Yes	89	92.7
No	4	4.2
Missing data	3	3.1

**Table 1: Descriptive statistics applied to survey responses**

*Note.* GAT = Gifted and Talented; PD = Professional Development

## Discussion

Results from this study revealed that participating NSW primary teachers acknowledged the existence of gifted and talented students in their classrooms and schools. However, the common lack of formal gifted and talented policy or coordinator indicated that identification, provisions and resources for gifted and talented students continue to be the responsibility of classroom teachers (Gallagher, 2007; Rowley, 2012). This is problematic in light of research suggesting that Australian educators have traditionally had limited opportunities to engage in this specialised learning as part of initial teacher education (Fraser-Seeto et al., Kronborg & Moltzen, 1999; Taylor & Milton, 2006). Without these formalised supports, teachers need to be provided with opportunities to engage in professional development in gifted and talented education as part of a holistic approach to inclusive education. Whilst results indicate 49% of participants had not undertaken professional development in gifted and talented education across their career, educators indicated their willingness to undertake professional learning in this area.

One common form of professional learning for inservice teachers is an education and support package, whereby educators progress through prescribed materials in an elective and self-paced manner. This type of professional development, which engages an attitude of inquiry and self-assessment (Minott, 2010; Tigelaar et al., 2005; Villegas-Reimers, 2003), can be considered self-directed professional development, with responsibility for undertaking and completing the professional development package or program shifting to the individual (Brown et al., 2001). As such, this type of professional development inherently requires the participant to be active in seeking out and engaging in their own professional development and be supported by an environment that values and encourages this avenue of professional development (Minott, 2010). Self-directed professional development thus requires effective support systems and ongoing revision to ensure it is utilised and appropriate for the needs of the user.

In investigating the knowledge and uptake of this sort of professional development for gifted and talented education (i.e., Gifted and Talented Education Professional Development Package for Teachers; Gross et al., 2004), respondents indicated they had minimal awareness of the package, but overwhelmingly were willing to engage in this form of development. Our data suggest that this lack of awareness of the professional development package was related to not having undertaken any previous learning in gifted and talented education and having not taught (or lack of awareness of having taught) a gifted and talented student previously. This suggests that exposure to the concept of 'giftedness' and experience with gifted and talented students may inspire an interest in gifted and talented education and, by extension, teachers' ability to adequately and effectively provide for these students.

The increased awareness of the professional development package among those who had undertaken previous gifted and talented education professional development and/or had taught gifted and talented students unfortunately did not translate to an increased likelihood to have engaged with the support package. In fact, results indicated that uptake of this gifted and talented package had been virtually non-existent amongst all of the respondents surveyed. Despite this lack of uptake, inservice educators participating in the survey overwhelmingly (92.7%) indicated their willingness to undertake it in the future. Responses thus suggest respondents have a desire to increase their understanding, skills and pedagogical practices in line with gifted and talented students' needs. However, a lack of knowledge and ongoing

support for the use of the Gifted and Talented Education Professional Development Package for Teachers (Gross et al., 2004) may have contributed to the lack of uptake and completion of this professional development.

Although measures were taken to optimise generalisability of our findings (i.e., sample size, random cluster sampling), these results must nevertheless be interpreted in the context of the inherent difficulties in survey research. Specifically, all survey research is hindered by the limits of self-report data (e.g., the possibility that socially desirable responses were given, rather than those more indicative of reality). In order to minimise this possibility, anonymity of participants was maintained at all times and participation was voluntary in nature. Despite these efforts, there may be a disconnect between teachers' perceptions of how they would act and their subsequent behaviours. For example, an indicated desire to participate in gifted and talented professional development may not eventuate due to perceived time and financial constraints and lack of ongoing support. In addition, due to the sample being drawn from a specific rural NSW region, it is also difficult to generalise in regions that differ dramatically in makeup (e.g., in socioeconomic status, class sizes, etc.) Whilst it would be interesting to examine the types of professional development undertaken by respondents, these data were not collected in the current study. Future research in this area is required to further investigate the effects of different types of professional development on teachers' attitudes, perceptions and behaviours (Hudson, Hudson, Lewis & Watters, 2010; Parliament of the Commonwealth of Australia, 1988, 2001).

## Conclusion

Self-directed professional development provides participants with opportunities to undertake specific learning in areas of interest, at their own pace and when convenient to their lives. Whilst it is a flexible and accessible form of professional development, ongoing lack of support, knowledge of existence and resourcing can significantly impact the uptake and completion of such professional learning. This study contributes to the broader context of this type of professional development and supports the need for further investigation into the factors that impact the ongoing effectiveness of self-directed professional development.

This study provides an important investigation into inservice teachers' knowledge and uptake of a prominent (according to its creators) and widely circulated Gifted and Talented Education Professional Development Package for Teachers (Gross et al., 2004). Results of this study suggest that educators are aware of gifted and talented students within their schools and are willing to undertake specific education to improve their knowledge and practice. Yet knowledge and uptake of the 2005 Gifted and Talented Education Professional Development Package for Teachers (Gross et al., 2004) remains poor amongst teachers, perhaps as a result of insufficient initial and ongoing promotion of the support package. This study thus reveals a disconnect between willingness and action, such that teachers' stated willingness to undertake gifted and talented professional development outpaces their actual uptake and completion of available courses or resources.

This study thus provides initial insight into the knowledge and uptake of a common form of inservice professional development, namely the Gifted and Talented Education Professional Development Package for Teachers. As no current data exists regarding the knowledge and uptake of this package in NSW government schools, this study represents an initial benchmark of the contribution this professional development package may be making in

this area. That is, despite teachers having continued access to this comprehensive and flexible professional development package, there was little knowledge and virtually no uptake of the support package. This contrasts teachers' stated willingness to engage with the support package and their perceptions that doing so would increase their confidence and skills in meeting the diverse needs of their students. As such, further research is needed on the factors influencing educators' awareness and uptake of inservice educational supports. Research on the impacts of professional development (and persistence of these effects) in gifted and talented education on educators' attitudes, beliefs and self-efficacy toward gifted and talented students is also needed. Such insights would assist in developing effective strategies and supports for improving preservice and inservice supports at both administrator and educator levels.

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