**Title:**

What Keeps Beginning Teachers in the Teaching Profession? The Use of Best-Worst Scaling to Quantify Key Factors

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**Abstract**

Many countries report high attrition rates among beginning teachers. The literature cites many factors that influence a teacher’s decision to remain in the profession. These include remuneration, workload, support, administration and parents. It is unclear, however, which factors matter most to teachers and, consequently, where best to direct limited resources. This study uses Best-Worst Scaling (BWS) and complementary experimental design methods to quantify the relative importance of these factors. The results suggest that improving student engagement, experiencing professional challenges and enjoying collegial support are the most important factors influencing teacher decisions to stay in the profession. Beginning teachers nominate remuneration, recognition, and external factors (e.g., class size; location) as playing a lesser role in their decision to remain teachers.

**Highlights**

* Attrition rates of beginning teachers are alarmingly high, driven by many factors
* Best-worst scaling is a method to quantify and rank factors on importance
* Best-worst scaling is used for the first time in an education context in this study
* Student engagement, professional challenge and support identified as most important

**Keywords**

Retention

Attrition

Best-worst scaling

Beginning teachers

Teacher support

**Why Do Early Career Teachers Choose to Remain in the Profession? The Use of Best-Worst Scaling to Quantify Key Factors**

1. **Introduction**

Recruitment and retention of beginning teachers are important and challenging issues for the management of the education sector in many countries. It is an accepted wisdom that it is insufficient to focus on recruitment of new teachers; attention must be paid to retention and attrition as well (Schuck et al., 2012). Retention figures in a number of countries cause concern. Abdallah (2009) notes that 50% of teachers in the United States are likely to leave the profession within five years. Beginning teachers appear to be overrepresented in general figures relating to attrition, with Ingersoll and Smith (2003) reporting an attrition rate of 16% among the entire US sector based on National Centre of Education Statistics collected between 2000 and 2001. In the United Kingdom, figures suggest attrition rates higher than 50% (House of Commons Education and Skills Committee 2004, Fenwick & Weir, 2010). Fenwick and Weir (2010) note how complex it is to track teacher movements, and suggest that international comparisons are difficult to make in the light of variations in interpretations of teacher workforce data. In Australia, current information on attrition rates is ambiguous and not well documented. A government report (DEST, 2003, 87) noted that attrition rates of 25% among early career teachers were cause for concern.

Studies examining the stated intentions of beginning teachers to leave the profession in the future suggest dissatisfaction in the profession and the potential for higher attrition in future and indicate that high attrition rates are likely to continue. For example, a survey of 1351 beginning teachers reported that 24% stated an intention to leave the profession within five years (Australian Primary Principals’ Association, 2007). In another study, 1200 beginning teachers were asked about intentions to leave within 10 years; this figure almost doubled to 45% (Australian Education Union 2006).

In contrast, Canada does not suffer from high attrition rates of beginning teachers. This situation is claimed to be a result of attention to and resourcing of induction into the profession (Gambhir et al., 2008). This suggests that if factors that encourage retention are used to direct resources, attrition rates will decline. However, while the factors that encourage retention are generally known and articulated in the literature on teacher retention, the relative importance of these factors has not been studied, and knowledge of these factors does not appear to have stemmed the tide of departures from teaching in many countries. The figures noted above provide ample evidence of the need to further investigate teacher retention and the relative importance of the conditions and actions that may improve it.

This paper discusses a project which was developed in response to the need to further investigate teacher retention and attrition. The project was undertaken in New South Wales in Australia 2006-2010. The project’s overarching research question was ‘*Why do some beginning teachers choose to leave the profession and why do others choose to remain?’*

The subsidiary research questions were:

* *What are the relevant experiences of beginning teachers in their first four years of teaching?*
* *What influences beginning teachers to remain in the profession?*
* *What influences beginning teachers to leave the profession?*
* *What strategies might assist in the retention of effective beginning teachers?*

Accordingly, the focus of the research was on identifying the factors that led to teachers’ decisions about staying in or leaving the profession.

1. **Literature Review**

There is a substantial literature that discusses the factors that underpin teachers’ satisfaction or dissatisfaction with teaching. For example, the literature on teacher retention and attrition articulates the range of factors that can be better managed to support beginning teachers in their decision to remain in the profession. These factors are in addition to those that explain departures by beginning teachers as a result of various personal circumstances beyond the control of school administrators (e.g., child-rearing; sickness; opportunities of partner). For example, several studies highlight the value of formal support such as mentoring programs (e.g., Marable & Raimondi, 2007; Manuel, 2003) and induction programs (Patterson & Luft, 2002). Others note that stress, frustration, fatigue and high workloads are factors that contribute to high attrition rates (Stevens et al., 2007). Liu and Onwuegbuzie (2012) found that 38.2% of the Chinese teachers surveyed were stressed and that 40.4% would consider leaving the profession if the opportunity arose. Whilst their study of 510 teachers was not isolated to beginning teachers, the study points to issues with salaries, breaks and holidays, workload, and student behaviour as being reasons for high levels of turnover experienced in this country.

A UK study of reasons for teacher attrition indicated several causes for unhappiness with teaching (Hancock & Scherff, 2010).The UK findings agreed with those from the survey by the Australian Education Union (2006), which indicated concerns about workload, behaviour management, pay and class sizes. These studies and others have identified factors that seem to be common across teaching contexts that are quite diverse, such as those in Australia, United States, Portugal and United Kingdom (for example, Australian Education Union, 2006; Darling-Hammond, 2003; Flores, 2006; Hancock & Scherff, 2010). Teacher pay is often cited as a potential barrier to entering the profession among school leavers (Liu et al., 2000; Richardson & Watt, 2006). Even in the context where salaries are less of a concern, the impact of principals, other teachers and support is substantial in determining the overall job satisfaction of beginning teachers. For example, Lam and Yan (2011) examine the experiences of teachers in Hong Kong where salaries are significantly higher than the median income. The authors find that the satisfaction levels of teachers is attributable to factors directly controllable by schools including volume of non-teaching workload, equity in the distribution of work and professional autonomy (Lam & Yan, 2011). Other researchers point to the isolation of teachers from their colleagues, even in programs where formal mentoring is in place (Ingersoll & Smith, 2003; Marable & Raimondi, 2007). McCoy (2003) interviewed 105 teachers in their first three years of teaching to establish that teachers have various needs and wants that, if properly managed or introduced, will improve their experience. Factors highlighted include: higher pay, smaller classes, support personnel, release from teaching, adequate supplies, active mentors, a supportive administration and the involvement of parents.

In general, McCoy’s research findings exemplify the literature on teaching attrition and retention; the factors that influence teachers to see value in their roles and remain in their chosen profession are extensive and stretch across a number of themes. They also appear to be common to teaching contexts across the world. A critical question therefore arises: if understanding of the factors that influence teachers to stay in teaching is so extensive, why does attrition continue to be such a vexed issue?

The answer seems to lie in the ability to resource the management of these factors. From an administrative point of view, the extensiveness of this list becomes problematic. There is little value in knowing that “everything matters” to teachers when, given a limited scope of influence or resources, the ability to address “everything” is unrealistic. Instead, there is a need to consider how some elements deserve greater attention to help focus and develop strategies that will offer greater benefit relative to other areas. Such insights may inform decisions about funding by administrating organisations. They may offer direction regarding where inquiry, evaluation and ongoing follow-up should occur by those involved in the management of beginning teachers (including principals and colleagues) and suggest which programs or areas of administration are most effective in impacting the decision of beginning teachers to remain in the profession. Such insights should help to direct limited resources to the places where they have the greatest effect.

The research discussed here employs a methodology aimed at investigating which set of factors is most important in determining the decision of beginning teachers to remain in the profession. The research highlights the advantage of approaching the question of value by considering the relative importance that teachers place on each factor that may impact their experience and decision to remain in the profession. The research method involves an innovative combination of qualitative and quantitative methods to identify these factors. The rationale for using such a methodology is that it allows employing authorities to decide what factors to devote limited resources to in order to get the best outcomes in retention. As noted earlier, there have been numerous studies on teacher retention, and they have overwhelmingly used the traditional data gathering methods of survey, focus group and interview. This study introduces the use of a quantitative methodology, known as Best-Worst Scaling (BWS) into research on teacher retention. The paper discusses the rationale for the use of BWS, how it was developed and used in this study, and the findings arising from its use. BWS is a method that allows researchers to quantify how important an issue is to an individual or group of individuals relative to other issues under consideration. BWS is a relatively straightforward measurement task that asks people to choose the single object from a listing of several objects that best matches a given criterion, and then choose the single object from the remaining objects that least matches that criterion. As will be explained, beginning teachers were asked to choose which factor mattered most and which mattered least in their decision to remain in the profession. This study is the first in which BWS is used in the context of research relating to the decision-making of teachers. BWS, however, is useful in any context where human decision-making is of interest, as is reviewed below.

*2.2.1 Best Worst Scaling: A Summary of the Technique and Application to Beginning Teacher Retention*

As noted above, BWS is a method that permits the quantification of how important a particular issue is to an individual or group of individuals relative to other issues under consideration. BWS was developed and introduced by Finn and Louviere (1992) in their article on how to appropriately assess the concern for food safety relative to other areas of public concern. BWS has been applied in various contexts, particularly those relating to consumer behaviour (e.g., Auger, Devinney & Louviere, 2007 ; Cohen 2009; Louviere & Islam 2008), personality research (Lee et al., 2007; Lee et al., 2008) and health economics (Flynn et al. 2007; Lancsar et al., 2007).

Rather than evaluate factors in isolation, BWS experiments involve asking people to consider several factors at once and nominate which factor best matches some criterion of interest to the researcher and, from the remaining factors, nominate the single factor that least matches that criterion. People then see a different set of objects and complete the task a number of times. The researchers count the number of times an item is chosen as best and the number of times it is chosen as worst: items that are viewed more favourably by respondents on a given criterion will be chosen more often as best, and chosen less often as the worst in any one set. Sets may consist of different overarching items like brands or products (the items), whereby individuals indicate which option performs best and worst on a particular latent dimension (e.g., a particular computer brand is best on usability). Alternatively, sets may consist of factors, whereby individuals select the factors that matters most/least to them (e.g., usability vs. value for money). In essence, a BWS experiment allows respondents to simply indicate the best and worst options in a given set.

Whilst the advantage of BWS is in that it involves a fairly simple task for respondents, its attraction to the present research context is in that it also provides rich information to the researcher – indeed the information is arguably even richer because the respondent must make trade-offs with other items (Louviere and Islam 2008). The BWS method in this study uses theoretical measurement models and ways to implement them that generalize Thurstone’s (1927) Method of Paired Comparisons to multiple comparisons, with the benefit that a) multiple comparisons are much more statistically efficient and b) that the number of comparison sets increases only linearly, not geometrically as in paired comparisons (e.g., see Louviere & Woodworth 1983; Marley & Louviere 2005). So, rather than consider each item in isolation, one can learn relative importance.

This method is in contrast to asking respondents to rate items one at a time, which means that respondents have no disincentive to make any trade-offs when asked about items in isolation and may simply indicate that everything matters (Carson et al., 2000). Knowing that “everything matters” to participants does not help organisations understand where to focus their strategic efforts and resources. Indeed, organisations, like consumers, must make trade-offs, and they must choose to focus on one factor over another (Sheth et al., 1991). Even asking about multiple factors one at a time is of questionable value, with no knowledge about those respondents who may have looked at the set of scale items in isolation versus those who viewed items as a collective and reflected their implicit trade-offs. BWS is also advantageous because it is cognitively easy: there is no allocating of points or percentages to items, or a need to rank a lengthy list of items simultaneously (Louviere & Islam, 2008).

The outcome of a BWS experiment is that it provides researchers a measure of factor importance for each object that has been evaluated on a comparable ratio scale (Lancsar et al., 2007), as discussed by Marley and Louviere (2005), who provide formal proofs of measurement and model properties. In commercial research, BWS is often referred to as ‘maximum difference scaling,’ as the items chosen best and worst are the two items that are furthest apart on each consumer’s latent scale. This is the first time it has been applied in a study of education to investigate the factors that influence whether beginning teachers will remain in the teaching profession.

1. **Research Design and Methods**

The research employed mixed methods (Johnson & Onwuegbuzie, 2004) drawing on complementary qualitative and a quantitative data gathering and analysis to investigate the question of why some teachers stay in the profession and why some leave. The qualitative component identified factors underpinning teachers’ decisions about staying or leaving the profession through interviews. This component then informed the second component of the study, the use of BWS. This aspect of the research identified the relative importance of the articulated factors in teachers’ decision-making.

The use of BWS was complemented by the employment of efficient experimental design methods called Balanced Incomplete Block Designs (BIBDs) (Street & Street, 1987). BIBDs were useful in determining which subset of factors a teacher would need to evaluate to obtain a greater amount of statistical information in a more efficient and balanced manner than if subsets of factors were simply displayed at random. Thereby, the use of BIBDs was to minimise design-induced bias from a statistical point of view.

*3.1 Qualitative research to identify possible factors*

In the current context, a listing of 31 factors that may impact teachers’ decisions to remain in the profession was identified through the qualitative research component of the study which is briefly outlined below. These factors were supported by the literature on teacher retention.

The set of factors deemed to be influential on teachers’ decisions was gathered through qualitative methods involving phone-mediated journals and interviews. The application of BWS and use of BIBDs then allowed the list of 31 factors to be sorted on the basis of which factors are most important to teachers in their decision to remain in the profession.

The qualitative research involved a selection (n=42) of beginning teachers participating in up to three phone interviews over the course of the project. The 42 participants were selected from a list of approximately 280 volunteers to ensure representation from teachers in rural and urban areas, and primary and secondary schools.

Interviews were conducted with the participants, during which they shared their metaphors, support/challenge zones, as outlined below, and a narration of their experiences. Participants could choose to respond to these tasks through various media including a written journal, through email responses and/or through phone conversations. The specifics of each task were as follows:

* Metaphor: Teachers were encouraged, with the provision of appropriate structure, to nominate metaphors to describe their teaching experience. Such a method enabled them to revisit their initial metaphor in later phone conversations with researchers, and change or even embellish their metaphor.
* Support and Challenge Zones: Teachers were provided (electronically and in hard copy) with a grid representing where they perceived themselves to be in terms of levels of support and of challenge they experienced. They were requested to position themselves on this grid, to indicate high or low levels of each.
* Narratives: Teachers who participated in the interviews were asked to discuss critical incidents, and associated feelings, that they had experienced during their teaching.

The findings from the interviews and journals underwent a process of data reduction into themes that were common across the group using established open coding analytical methods (Liamputtong & Ezzy, 2005). These themes were compared to themes arising in an analysis of the literature on retention and from discussion with beginning teacher facilitators to identify those factors that a) were central to decisions of teachers to stay in the profession and b) could be addressed in some way by educational administrators. So for example, personal factors such as intention to start a family were not included.

Once the factors were identified they were placed into a BWS and sent to beginning teachers in an online format. The value of using BWS and experimental design theory in the form of BIBDs is that they allowed the researchers to address the question of what factors beginning teachers value and rank the factors in order of relative importance on a comparable ratio scale (Marley and Louviere 2005). That is, the BWS was applied as a quantitative stage of the research to further elaborate on the importance of those factors identified in the qualitative stage of the research.

*3.2 Quantitative Research: Best Worst Scaling framework*

This part of the study was developed to understand the importance that early career teachers place on various factors that may influence them to remain in the profession. The task appeared online and respondents clicked a radio button to indicate what was most and least important among items presented in each set. An example of the task is presented in Figure 1. The task was a little more complicated than others because teachers were asked the question of most and least importance twice. The additional two questions provided complete ranking information of all items listed in any one set and all items overall.

The analysis involved counting the number of times an item is ranked best (B-score) and the number of times it is ranked worst (W-score). There are a number of ways to calculate an overall score of importance, a simple one being the difference in the two scores, or to take the square root of the ratio of the two scores (Marley & Louviere, 2005). In this project, the latter method was used, ie the square root of the best score divided by the worst score (i.e. Sqrt(B/W)) was calculated. The scores thus derived can be interpreted as having ratio properties. For example, if item A has a score of 6 and item B has a score of 2, then item A is 3 times as important as item B in an individual’s decision making.

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*Insert Figure 1 about here*

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*3.2.1 BWS and Balanced Incomplete Block Designs (BIBDs)*

The subset of items to show in each set is determined by an experimental design, usually a balanced incomplete block design (BIBD). BIBDs are useful as they arrange all the items as efficiently as possible reducing the number of sets that are required to learn information about importance. The result is that each item occurs equally often and a controlled number of times with each other item (co-occurrence). To illustrate, suppose that there were only seven factors that were deemed important to beginning teachers. One could ask to rate each of the seven factors one at a time on a Likert scale, but without any implicit trade-off required by the task, the researcher may conclude that each factor is very important. Alternatively, the researcher could arrange the seven items into sets of four and ask each respondent to choose the one item that is most important and the one item that is least important. To do so would require arranging the seven items into sets of five: this would result in 7C4 or 35 sets.

A BIBD, however, allows a considerable reduction in the number of sets of the same size to be evaluated with minimal loss of statistical information and impact on bias. For example, instead of having all combinations, a BIBD exists such that each of the seven items can be considered in sets of four on four occasions, twice with each other item. For example, in Figure 2 item 4 appears on four occasions and appears in the same set as item 5 on two occasions. This results in a total of seven rather than 35 sets.

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*Insert Figure 2 about here*

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Sets would then be formed from each row of the BIBD design. For example, taking the last row of the BIBD design in Figure 2, a respondent would see the four items that are in set 7 (items 1,2,5,6). The respondent would then be asked to choose the item that best matches the desired criteria and the item that least matches the desired criteria. For example, in Figure 3, it appears the respondent believed item 1 to match the given criteria best out of items 1, 2 5 and 6 whilst item 5 was the least appropriate in matching the given criteria.

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*Insert Figure 3 about here*

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*3.2.2 Application of BWS BIBDs to Factors Determining Teacher Retention*

BWS and complementary use of BIBD allows factors to be evaluated by respondents using a fairly simple task that allows researchers to learn about relative importance of these factors in the most efficient manner possible. The previous literature and preceding qualitative research to the current research revealed many factors that may influence a teacher’s decision to remain with the profession. The objective of the next stage of the research was to rank and quantify these factors in order of perceived importance as nominated by beginning teachers.

In the case of the BWS application to the current study, there were 31 factors that needed to be arranged in terms of what most impacted the decision of teachers to remain in the profession. A BIBD was constructed with 31 items, each item appearing 15 times, co-occurring twice with each other factor. Five items appeared in each set, resulting in a total of 93 sets. This is a lot less than the full combination possible to learn about full ranking: a total of 169,911 sets. Nonetheless, rather than ask each respondent to evaluate all 93 sets, each individual considered 12 sets only. These 12 sets were randomly drawn from an overarching design based on repeated altered versions of the 93 sets such that equal set frequency occurred at the aggregate level.

1. **Results**

*4.1. Respondents*

An online survey was prepared as described above in which the 31 factors were offered in different combinations. A link was sent out by email to 1700 beginning teachers on a department of education database in an Australian state. Teachers were invited to respond if they had started teaching within 5 years of the survey date. 258 eligible teachers completed the survey, a response rate of 15.1%.

The majority of participants were female (76%; n=197) with two thirds aged between 21 and 30 years (66%; n=170) and another 21% (n=54) aged between 31 and 40 years. No respondents were under the age of 21. In terms of time in the profession, close to one third had started teaching less than a year prior to undertaking the survey (32%; n=83), close to another third started between one and two years prior (34%; n=35), and another 14% (n=35) represented those who had been teaching for between two and three years. The remaining 20% had been teaching between three and five years.

Participants were asked to use a five-point Likert scale to rate the extent to which they believed they were emotionally prepared for teaching when they first started in the profession. The responses followed an inverse-U shape skewed towards most being prepared (M=2.69; SD=1.18) with 17% indicating a ‘1’ suggesting they were highly prepared and 7% indicating a ‘5’ for not at all prepared. The majority of participants felt their personal life was highly disrupted when they commenced teaching with 50% of participants selecting a ‘1’ (‘highly disrupted’) and only 16% selecting a ‘5’ to indicate they felt no disruption at all (M=1.99; S=1.24). There was considerable similarity among participants in terms of the extent to which they knew why they were teachers: 86% indicated a ‘1’ or ‘2’ representing a strong sense of purpose (M=1.71; SD=0.95) rather than a ‘4’ or ‘5’ (5%; n=14) who felt they had little or no sense of purpose as teachers.

The majority of participants taught at schools located in urban areas (71%), rather than rural areas (29%; n=76), with only 5% of schools that participants taught at having less than 100 students. Instead, participants were largely represented by those that taught at schools with over 500 students (54%), followed by those with 300 to 500 enrolments (22%).

*4.2. BWS Analysis and Results*

The best-worst scores relating to the 31 factors that beginning teachers evaluated in the task are listed, in order of importance, in Table 1. For convenience, the scores have been sorted and standardized with respect to the least important factor of the 31 items evaluated. The BWS scores can be interpreted in the following manner: the most important factor, student involvement, is 7.82 times more important to beginning teachers than the least important factor relating to socialising in terms of any decisions they make about remaining in the profession. Since the BWS scores have ratio properties, the ratio of one factor to any other is meaningful. For example, by taking the BWS score relating to student involvement (7.82) and dividing by the BWS score relating to school culture (3.03) indicates that student involvement is 2.58 times more important than school culture, the 15th most important factor.

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*Insert Table 1 about here*

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1. **Discussion**

In summary, the use of BWS allowed the identification and reduction of items that are most important to beginning teachers in their decision to remain in the profession. Given such a large list of items, ranking the entire list would have been difficult and rating items one at a time would not provide insights into relative importance. The BWS scaling results allow those who have an interest in the decisions of beginning teachers to understand which factors are most important to beginning teachers relative to others in terms of their decision to remain in their chosen profession. The insights relate to factors that are actionable, at least in theory; it is recognised that addressing improvement on some items may be financially prohibitive. Several dominant themes emerged from the results and these are now discussed.

*5.1. Engagement*

The factor that beginning teachers nominated as being most influential in their decision to remain in the profession related to the level of student involvement that they could create for those in their classes. This showed that the extent to which beginning teachers felt able to engage students was paramount to their satisfaction in being teachers. It appears to mirror the themes that appear in the literature in explaining why teachers felt motivated to join the profession in the first place: to make a difference in the lives of their key stakeholders, namely students. Ewing and Smith (2003) identify an altruistic theme in that teachers are motivated by a desire to make a contribution to society, help others and work with young people. McKenzie et al. (2008) indicate that whilst the motivation may be largely altruistic ('to make a contribution’) there is also an element of intrinsic (e.g., ‘personal fulfilment’), which is demonstrated by the second most important factor (professional challenge).

The result provides some support for school administrators to sponsor programs and deployment of resources that will assist beginning teachers in empowering them to excel in the area of student involvement. For example, levels of student engagement may be higher when new technologies, such as interactive whiteboards (IWBs) are introduced into the classroom (Hall & Higgins, 2005; Kearney & Schuck, 2008). The findings, however, do not shed light on which resources or programs will be better in improving student involvement and engagement. Any decisions to address teacher retention by improving levels of student engagement need to balanced against whether or how student learning outcomes are effected (Beauchamp & Kennewell, 2010). For instance, Hattie’s (2005) analysis suggests that whilst relatively smaller class sizes are thought to increase engagement the impact is often small as it often relies on teacher quality and adaptability for student learning to be enhanced.

*5.2. Teaching as a challenging and satisfying profession*

Beginning teachers perceive themselves as professionals, and satisfaction in their work is gained from meeting the professional challenges it presents (factor 2). Sinclair (2008) found an underlying motive in the most common reasons for choosing teaching “reflected a positive self-evaluation of their attributes and capabilities to be teachers, work with children and ... the intellectual stimulation teaching would provide” (p.79); the findings in this study indicate that beginning teachers are more likely to continue in their chosen career if they can remain stimulated by its challenges.

However, the need for professional challenges is not necessarily addressed by inclusiveness in school decision making, as this was a factor (factor 17) ranked lower in importance relative to other factors. Interestingly, beginning teachers are less influenced in decisions to remain in the profession by the policies and procedures they are required to implement in their teaching (factor 29) and the administrative requirements their profession entails, such as the daily paperwork required (factor 28). The ability for administrators to improve the professional standards of teachers and teachers’ abilities to meet challenges is often governed by training and accreditation. Interestingly, the support that administrators may use to assist beginning teachers in meeting the requirements of such standards (factor 23) is less imperative relative to other programs of support. However, administrators’ and policy makers’ views of the status of the teaching profession have an influence on how teachers construct their work. Contrasting examples of this impact can be seen in England, France and Denmark (Osborn, 2006). The author concludes that some teachers have been subject to a contractual performance model in contrast to a professional covenant model; the former performance model undermining their vocational aspirations and perceptions of the profession.

*5.3. Collegiality, Support and Collaboration*

The results relating to the factors appearing as 3rd to the 9th most important out of the 31 factors investigated are a clear indication that beginning teachers value collegial support that they receive in their school environments as well as the opportunities for collaboration. The results are a strong endorsement of actions that aim to improve support for beginning teachers such as mentoring programs and staff induction programs. The findings also support the recommendations outlined by previous researchers such as Marable and Raimondi (2007) who noted the value of developing mentoring programs and emphasised the need for collegial and administrative support in the absence of such programs.

The desire to interact with those in the school environment, however, does not extend to social activities. This factor was nominated as the lowest of the 31 factors studied in terms of having an impact on the decision of beginning teachers to remain in their profession. It echoes the previous discussion relating to the desire to participate in teaching through a professional and challenging approach rather than one that involves their personal lives.

*5.4. Remuneration and Recognition*

In many countries, the attraction to the teaching profession is largely reported as being removed from extrinsic factors including those relating to monetary remuneration (c.f. Lam & Yan, 2011). The low ranking of factors relating to salaries (factor 19) and incentives (factor 22) indicate that such factors continue to feature as less important relative to others even once teachers have begun their careers. Indeed, teachers are happy to participate in the teaching profession with less concern for any form of appreciation or acknowledgement for their efforts or achievement (factor 21). Administrators may be tempted to infer from such a research finding that teachers would be happy to teach regardless of how much they are paid – the results, however, are based on what teachers are currently paid and their perceptions about what they would be paid in another competing profession.

*5.5. External Factors*

The relatively low ranking of local conditions (factor 20) seems to indicate teachers’ acceptance of external factors such as geographical location and perhaps endorses their responsive nature to meet any challenges (environmental or otherwise) with professionalism. Teachers also nominate the number of students in their classroom (factor 25), as relatively less important in their decisions to remain as teachers. One issue that does warrant attention, however, is the potential impact that student numbers may manifest in terms of the behaviour of students in the classroom (factor 12). In addition, beginning teachers call for support in their teaching when it comes to teaching in an environment that involves those with special needs (factor 11). Programs such as involvement of parents in reading programs have obvious benefits for student learning and for fostering the development of a school community (Epstein & Dauber, 1991). Williams (1991) found a desire to work with parents in school related matters, but felt training was important in this process. The present findings, however, indicate that the influence of parents on the retention of teachers in the profession is less of a concern. Whilst the results suggest the significant impact of support on beginning teachers as previously discussed, the support and involvement of parents does not appear to be part of this impact (see factor 27 and factor 30).

1. **Conclusions**

Addressing retention of beginning teachers is a difficult challenge, especially when so many factors can potentially influence such teachers. This research, however, uses a methodology that is able to highlight those factors that are more influential than others. It appears that central factors to be considered are the support of teachers in engaging their students, reinforcement of the satisfaction teachers feel in meeting the professional challenges of teaching, and provision of an environment that sponsors professional collegiality, collaboration and support from administrators.

The use of BWS and BIBDs is a novel approach in addressing questions about the relative importance of factors as nominated by teachers to remain in the profession. To some extent, whilst the technique of BWS appears well suited to consider such questions, questions of reliability and validity need to be recognised. While the statistical efficiency of choice-based measurement procedures that use multiple comparison sets has been long-established (see, e.g., Louviere & Woodworth, 1983; Street & Burgess, 2007), the external validity of BWS is much less discussed. There has been limited external validity work for the case of BWS discussed in this paper. One exception is the use of BWS to identify the most preferred wines for a dinner party for a research centre, and then to predict how much of each wine would be consumed at the party (Louviere, 2012). This particular application showed almost perfect agreement between model predictions and actual choices. Louviere and Woodworth (1983) also offers some insight into questions about an external validity test based on “best-only” choices, which shows high agreement between measured preferences and actual choices of goods in supermarkets. Finally, it is worth noting that there have been a series of tests of BWS measured values using Schwartz’ List of Values (Schwartz, 1994) against various behaviours and attitudes that should correlate positively or negatively with particular value profiles. These tests generally have supported the expected relationships (see, e.g., Lee, Soutar, & Louviere, 2008).

The findings call for establishing and continuing programs of support for beginning teachers. For example, the New South Wales DEC Teacher Mentor program in Australia exemplifies such possibilities (Ewing & Manuel, 2005). The current research also suggests that teachers need more insights into ways to improve student engagement. Student engagement is a complex field of study with a range of motivational and contextual influences. Without wishing to oversimplify the field, it is noteworthy, that growing numbers of technological innovations and developments associated with 21st century learning may contribute to enhanced adolescent engagement (Schuck, Aubusson & Kearney, 2010). Beginning teachers need to be viewed as professionals: societal attitudes to their level of professionalism are often undermined by beliefs that fail to recognise that beginning teachers have undergone an extensive and rigorous preparation for teaching (McCoy, 2003). Further, addressing the extent to which teaching offers professional challenges may improve levels of satisfaction and ultimately retention.

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Figure 1: Screenshot Example of the Best-Worst Scaling Task presented to ECTs



Figure 2: Example of a BIBD for 7 items listed in sets of 4 with pair frequency 2.



Figure 3: Example of the BWS task that corresponds to one row of the BIBD design



Table 1: Listing of 31 factors and corresponding BWS scores

|  |  |  |
| --- | --- | --- |
| **Factor / Ranking** | **Incentive concept tested** | **Relative Importance (BWSi)** |
| 1 | Student Involvement - *the extent to which you engage your students* | 7.82 |
| 2 | Professional Challenge - *the extent to which your work is professionally satisfying* | 7.64 |
| 3 | Collegial Support – *the level of support offered by other teachers* | 7.24 |
| 4 | Professional Collaboration – *the relationships you have with others who are involved in student learning* *or welfare* | 5.39 |
| 5 | The support you receive during your first year – *the orientation you have to the school and system (e.g. structured supervision; mentoring)* | 5.12 |
| 6 | Executive Support *– the type of support that is provided by the school executive (principal, deputy, head teacher, assistant principal)* | 5.00 |
| 7 | Staff Culture *– the interaction and support among staff* | 5.00 |
| 8 | School “Climate” *– the “tone” of the school (welcoming atmosphere)* | 4.97 |
| 9 | Pedagogical Support *– the quality of support given to you for planning and delivering teaching and learning* | 4.82 |
| 10 | Workload *– the time and effort you commit to teach effectively* | 4.64 |
| 11 | Special Needs - *support for your teaching of student with particular learning and/or behavioural challenges* | 4.00 |
| 12 | Student Behavior - *the way students behave at school* | 3.39 |
| 13 | Resources– *things that support you in your job (e.g. ICT, facilities, space, materials)* | 3.39 |
| 14 | Philosophical Fit – *the extent to which your beliefs about teaching match those of the school* | 3.30 |
| 15 | School Culture – *the way your school does things, whether explicit or unspoken* | 3.03 |
| 16 | Future Career Opportunities *– options available for future promotion and/or transfer* | 3.00 |
| 17 | Professional Respect *– opportunities to participate in school decision making* | 2.91 |
| 18 | Scope of Role *– the variety of tasks you have to perform* | 2.52 |
| 19 | Salaries *– the amount of money you get paid* | 2.52 |
| 20 | Local Conditions *– environmental factors that affect your daily life as a teacher (e.g. geographic, housing, classroom, web access, isolation)* | 2.42 |
| 21 | School Appreciation *-The school community’s acknowledgement of your efforts and/or achievements* | 2.39 |
| 22 | Incentives – *This includes both financials incentives such as locality allowance, and non-financial incentives such as leave, etc.* | 2.00 |
| 23 | Accreditation Requirements – *support provided to assist you to meet the requirements of the Professional Teaching Standards* | 1.91 |
| 24 | Teacher Preparation *– extent to which your teacher education program prepared you for teaching* | 1.85 |
| 25 | Class Size – *the number of students in your classroom* | 1.73 |
| 26 | Professional Isolation *– your feelings of working alone* | 1.64 |
| 27 | Support of Parents *– the support of parents in classroom* | 1.30 |
| 28 | Administrative Requirements *– the daily paperwork required* | 1.30 |
| 29 | Policies and Procedures *– the policies you are required to implement in your teaching* | 1.18 |
| 30 | Parental Expectations *– the parents’ expectations of you as a teacher* | 1.12 |
| 31 | Socialising *– opportunities to participate in social activities* | 1.00 |