



Using Projective Techniques in Education Research

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ABSTRACT *Projective techniques are unusual and often intriguing for respondents to complete, permitting them to express thoughts and feelings which can be difficult to access by direct and structured questioning. This is achieved by presenting respondents with ambiguous verbal or visual stimulus materials, such as bubble cartoons, which they need to make sense of by drawing from their own experiences, thoughts, feelings and imagination before they can offer a response. Importantly, projective techniques can be fun and engaging for respondents, especially when they become involved in their analysis and interpretation. The various types of projective techniques are described and their benefits and drawbacks examined. A project involving students completing a range of projective techniques is used to illustrate these benefits and drawbacks.*

Introduction

Projective techniques were developed for use in clinical psychology in the early twentieth century. These techniques, including the Rorschach and the Thematic Apperception Test, are employed in personality assessment (Rabin, 1981). After a sharp decline in their use during the 1960s, they are now widely used in clinical practice across the globe (Piotrowski *et al.*, 1993). Despite some reservations about them in the academic community, the practitioner community continues to find projective techniques useful (Pruitt *et al.*, 1985). Currently, many of these techniques are being adapted for computer-assisted and computer-adaptive testing (Bellak, 1992).

During the 1940s, they were adapted from their clinical settings for use in attitude, opinion and market research (Weschler & Bernberg, 1950; Smith, 1954). They were employed to encourage respondents to express private feelings and to say things that might be threatening or embarrassing when more conventional research techniques were used (Coblner, 1951). Since they require respondents to report on how others, and not they themselves, might think, feel or behave, the views expressed can be seen as other people's views or simply attributed to imagination (Schlackman, 1989). Thus, at least

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one of the assumptions underpinning the techniques remained when they were employed in these new research applications; that projection is the process of attributing one's own feelings, behaviour or motivations to others. These techniques were not used in market or opinion research to assess personality, nor did users adapt or develop any of the test norms or standards available to users in clinical settings. Rather, they were seen as a way of overcoming some of the response barriers associated with direct questioning (Oppenheim, 1992).

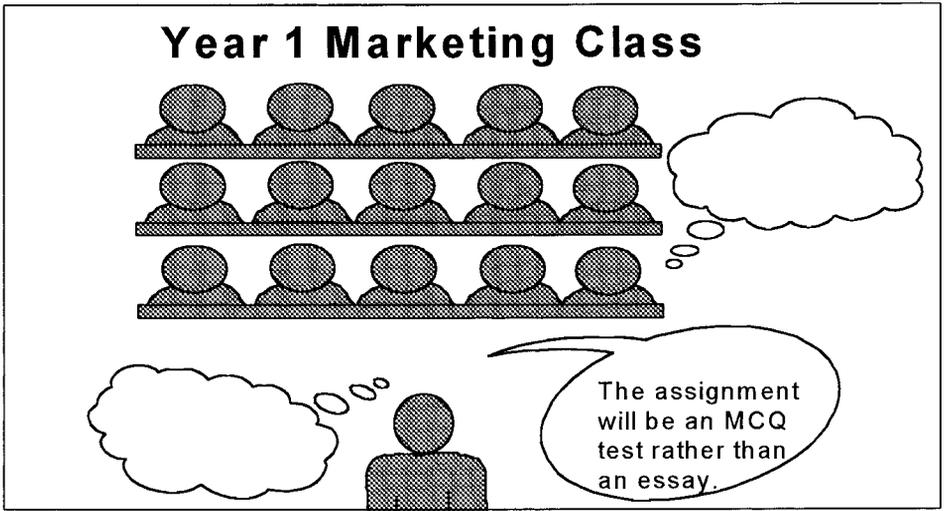
The adaptation of clinical personality tests for use in attitude and opinion research was controversial and, as reservations about them increased, their use declined sharply after the 1950s. Concerns were expressed about using them to tap into areas of the psyche that people might rather leave concealed, their validity was questioned and interpreting data reliably was problematic (Bellenger, *et al.*, 1976). This focus on their weaknesses persisted over the decades and it was only market research practitioners that continued to use them. During the 1980s they were rediscovered by academic consumer researchers (Rook, 1988). A few recent applications of projective techniques are reported in the fields of education research (Matthews, 1996), counselling (Clark, 1995) and employee evaluation (Pratch & Jacobowitz, 1998). However, commercial market researchers remain the key users outside of clinical practice (Cooper & Shore, 1999).

We have used projective techniques to help identify and understand students' views and feelings about computer-based learning and assessment. We find them especially useful when researching student populations who are often bored with being asked to participate in yet another research project. In this article we describe the main types of projective techniques available and discuss their benefits and drawbacks in some detail. We address concerns about their validity and reliability and ethical issues surrounding their use. In doing so, we draw from a limited, and sometimes dated, literature on using these techniques outside of the clinical setting. We illustrate our discussion with examples drawn from projects where we have employed them.

Types of Projective Techniques

Linzey (1959) identified five categories of projective techniques based on the type of responses they elicit.

1. Associative techniques. Respondents are asked to respond to a stimulus with the first thing that comes to mind. Word association is the most frequently used associative technique and is especially useful for identifying respondents' vocabulary (Gordon & Langmaid, 1988). It is best used in circumstances where the subject can verbalise a response, such as in one-to-one or group interviews, as the immediacy of response is important.
2. Construction techniques require respondents to construct a picture or story and are loosely based on the clinical Thematic Apperception Test. They encourage the expression of imagination and creativity. Respondents may be presented with a picture and asked to explain what is happening in the picture (Mick *et al.*, 1992; Sherry, *et al.*, 1993). They can be asked to draw their own picture. Matthews (1996) asked students and secondary school pupils to draw pictures of scientists at work. Market researchers often ask subjects to personify products and brands in words or pictures: if Head and Shoulders shampoo was a person, what would this person be like?
3. Completion techniques. The respondent is presented with an incomplete stimulus,



What is the Student Thinking?

What is the Lecturer Thinking?

FIG 1. MCQ bubble cartoon.

such as the beginning of a sentence, and is asked to complete it or to complete thought and speech bubbles in a cartoon drawing (Fig. 1). Completion techniques generate less complex and elaborate data than construction techniques, but they demand less from respondents as the stimulus material has more structure.

4. Choice or ordering techniques. Respondents select one from a list of alternatives, or arrange materials, such as pictures or statements, into some order, or group them into categories according to their similarities and dissimilarities (Mostyn, 1978). Market researchers present consumers with a variety of different brands within a product category and ask that these be placed into groups. Often consumers will place certain brands together in ways that were not envisaged by their brand development and management teams.
5. Expressive techniques. Respondents incorporate some stimulus into a novel production such as a role-play (Lannon & Cooper, 1983). Respondents might be asked to prepare and act out a mini play where the characters are, say, the computer, the software and a new user. Role-plays are best undertaken when respondents know and are comfortable with each other and the researcher.

Benefits of Using Projective Techniques

Projective techniques are sufficiently versatile to be employed within a wide range of research strategies and applications. They can be involving and fun for respondents, tap feelings, perceptions and attitudes that can be difficult to access by more direct questioning techniques and can be a rich source of new leads and ideas for researchers.

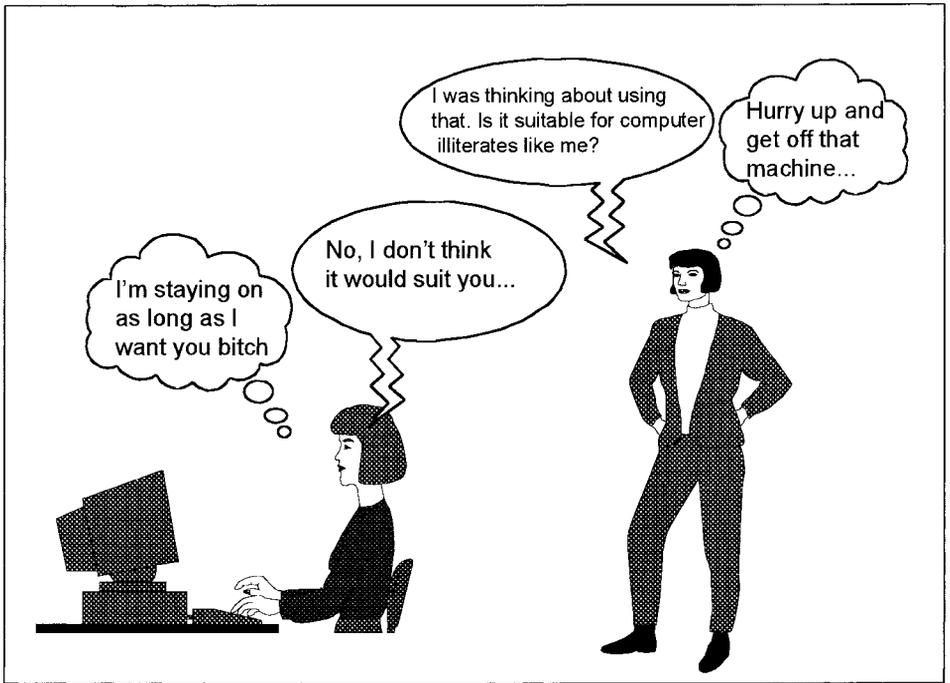


FIG 2. Library bubble cartoon.

Versatility

Whilst they can be used on their own, projective techniques are usually employed in combination with other quantitative and qualitative research techniques. Word association, sentence completion and bubble cartoons can be incorporated into interviewer administered or self-completion questionnaires (Oppenheim, 1992). Other techniques such as story telling or personification techniques are more appropriately employed in class discussions or focus groups. Where projective techniques are introduced at an early stage in group discussions, the responses they generate can provide ideas and new perspectives for further discussion (Will *et al.*, 1996). Clark (1995) suggested that they could be used in the counselling process for similar reasons.

Involving

The willingness of respondents to cooperate and volunteer thoughtful responses concerns academic and commercial researchers (Morton-Williams, 1993). Long questionnaires and long, boring runs of questions with little variety in response format can demotivate respondents. Researchers may be disappointed when answers to open questions appear superficial and stereotypical. By contrast, projective techniques generate respondent curiosity because they are different, unusual and intriguing. They are more likely to stretch the respondent's imagination and involvement than survey questions and scales. To provide a response to the bubble cartoon in Fig. 2, respondents need to ask themselves who are these people, where they are and what might be happening in the picture.

Fun

Projective techniques can also be fun to complete once respondents get over the initial surprise, self-consciousness and embarrassment at what they are expected to do. When we present projective techniques to students for completion in the classroom, before long they are comparing their responses with those of other students. In sharp contrast to the quiet examination type atmosphere often associated with self-completion questionnaires, the classroom is filled with noise and laughter. This does not mean necessarily that projective techniques trivialise research. The laughter and joking that accompanies the completion of projective techniques can be advantageous, facilitating self-expression and helping to overcome the self-censoring of responses (Gordon & Langmaid, 1988).

Overcoming Response Barriers

Projective techniques can give respondents permission to express opinions and feelings that researchers may find difficult to access by direct questioning (Oppenheim, 1992). There are few empirical studies on these barriers. Broderick & Penwill (1996) found that cartoon completion methods produced less respondent embarrassment and reluctance to answer on sensitive topics than quantitative scaling methods. Fisher (1993) found that indirect questioning reduced social desirability bias on variables subject to social influence but has no significant effect on socially neutral variables.

We asked a class of postgraduate students working in small groups to help generate questionnaire items on multiple-choice question (MCQ) tests. Groups were asked to brainstorm and not to censor potential items. To our disappointment there were few new or unexpected items. A simple bubble cartoon (Fig. 1) was administered to the same class illustrating a teacher explaining to the class that the assignment this semester would be an MCQ test rather than an essay. Students were asked to complete the thought bubbles for a student and for the teacher.

The student's thought bubble contained predictable responses, including 'good, I'll be able to guess some answers', 'this means I'm going to have to read the book', and 'I'll not be able to express my depth of knowledge'. The teacher's thought bubble contained previously untapped responses. Two categories of responses emerged. In the first category, MCQ tests were perceived as being administered as a punishment: 'this'll make you do some work for a change' and 'you thought this assignment was going to be easy, this'll show you'. In the second category, MCQs were perceived as being an easy or soft assessment option for the teachers: 'these can be marked quickly leaving me time to get on with more important things', 'I won't have boring old essays to mark' and 'marking these will be no effort'.

This cartoon bubble, like most projective techniques, asks the respondent to imagine how others might think or feel in a situation and in this way it can depersonalise or distance these thoughts from the respondent. Much of our research is with business students and on the subject of computer-based learning and assessment. Computers and computer skills are desired and valued by teachers and employers alike, and it may be difficult for students to express negative opinions. Additionally, computer-based learning initiatives are often evaluated by those who design them and whose commitment and enthusiasm may be conveyed to students, making it even more difficult for them to express negative views.

Idea Generation

Projective techniques are useful for generating insights and ideas that researchers may not have considered as being important, relevant or that they simply might not have thought about (Sampson, 1987). Questionnaire designers endeavour to design questions that all respondents will answer from the same frame of reference. Projective techniques, by their ambiguous nature, permit the respondent to answer from whatever frame of reference he or she considers relevant. In this way they can facilitate the identification of new issues not revealed by more conventional question designs.

Bubble cartoon 2 was employed in a project to obtain students' views on a computer-based guide to the university library. We expected responses to focus on whether it was easy or difficult to use, boring or interesting. Responses in the thought bubbles included, 'you've been at that terminal for ages, give someone else a go', 'don't hog the machine', and 'I wish she wouldn't hassle me to get off this machine'. The number of terminals in the university library is limited and there can be queues of students waiting to access a machine. This issue was raised by two-thirds of the students, indicating its salience and, more importantly, the responses illustrated that perceived access to the library guide might be a barrier to its use.

Drawbacks of Projective Techniques

In spite of these benefits, many researchers feel uncomfortable about using projective techniques. Specifically, there are ethical concerns, issues of validity and reliability, concerns about the interpretation of data and the choice and design of projective techniques. We discuss these concerns a little more fully in the following sections.

Ethical Issues

It is not difficult to understand why attitude and opinion researchers were first attracted to projective techniques. The true purpose of the questioning can be concealed by their ambiguous design and they require respondents to draw on their reserve of experiences and feelings in order to make sense of them. The early literature on projective techniques stressed words like private, hidden, unconscious, disguise and concealment (Weschler & Bernberg, 1950; Cobliner, 1951; Smith, 1954). Thus, projective techniques held the promise of delivering respondents' 'real' views and 'true' feelings. In today's research environment, it is much less acceptable to treat respondents as objects of study. Disguise and concealment of the research purpose is unacceptable to many researchers, who argue that collaboration and cooperation with their subjects in the research process is more ethical and, ultimately, more productive (Punch, 1994).

The way that respondents feel when they are presented with and expected to complete projective techniques has not been an issue in market research. Market researchers tend to focus on the needs of the client and the needs and anxieties of respondents have rarely been subject to investigation. Clark (1995), working from a counselling perspective, identifies few difficulties and argues that clients' defensiveness often diminishes with projective techniques because of their ambiguous, absorbing and non-threatening nature. We consider that there is little to be gained from concealing the nature or purpose of projective techniques from respondents. However, we cannot say whether this may increase or decrease anxiety. Nor can we assume that respondents do not feel anxious about what they might have revealed once the interviews are over.

It is important, however, that both the researcher and the respondents feel comfortable about employing and responding to projective techniques, and there appears to be a practice effect whereby confidence in using and completing them increases with use (Mostyn, 1978). Thus, the first stimulus materials presented to respondents are employed primarily to build confidence and overcome reactions of surprise and self-consciousness. Researchers too may feel embarrassed at asking respondents to complete such unusual tasks.

Validity

The assumption that projective techniques tap into the deep layers of the psyche that are inaccessible to direct questioning is open to challenge. Mostyn (1978) and Yoell (1974) argued that responses reflected cultural and social awareness rather than the projection of unconscious thoughts and feelings. Paradoxically, the reason they were rejected by Yoell and others is the very reason they are so attractive to consumer researchers today. With the prevailing cultural turn in much consumer research, projective techniques are employed for what they can reveal about consumer products and brands as cultural symbols and the myths that surround them (Durgee, 1988; Levy, 1994).

Analysis and Interpretation

Contrary to what might be expected, researchers find considerable consistency in responses generated by projective techniques (Branthwaite & Lunn, 1985), adding weight to the view that they reflect culture and social awareness. Whilst responses might be consistent, interpretation of what these responses mean is less so. This was problematic for early users of projective techniques, who were concerned that different researchers would offer different interpretations of the same data. This is less of an issue today as researchers question the notion of a single authentic interpretation of research data.

Currently, there are two broad approaches to the analysis and interpretation of projective data, the content analysis approach (Mostyn, 1985) and interpretive approach (Durgee, 1988; Levy, 1994). Content analysis is well documented in the literature and involves an examination of the content of the data to identify themes or categories and their salience. Market and consumer researchers employ a range of interpretive approaches to the data, including semiotic analysis (Alexander *et al.*, 1995) and story grammars (Mick, 1986; Mick *et al.*, 1992). Others employ psychodynamic frameworks to data interpretation (Broadbent & Cooper, 1987).

Most respondents have little experience of projective techniques and are naturally curious about their purpose, their own and others' responses and how these will be interpreted. Where practicable, we provide an opportunity for those who complete them to compare responses and to help in their analysis and interpretation.

Selecting and Designing Materials

There is no handbook or manual to offer the researcher guidance on which projective techniques to employ in a project or on the design of the stimulus materials. Most researchers design their own materials and design them for each specific project, and few explain how they went about these tasks (Schlackman, 1989). More importantly, we know little about which techniques did not work or why particular designs were rejected.

Market research agencies and advertising firms have internal guidelines on these issues but they remain unpublished. Gordon & Langmaid (1988), Mostyn (1978) and Smith (1954) provide examples of how the different categories of techniques have been used by market researchers. It is clear from their accounts that there are few generally agreed principles; what works well in one project may be unsuitable for another similar project. Users agree that designs should be kept simple, avoiding too much detail or stylisation (Gordon & Langmaid, 1988). This is an area where research is badly needed. To illustrate the trial and error nature of these decisions we discuss some of the projective techniques we employed in one of our research projects.

Using Projective Techniques—an illustration

We were asked to contribute to the evaluation of a computer-based guide to the university library. The guide takes the users on a tour of the library, providing information on the range of library services, the hours of opening, and so on. Students were invited to use the guide and, afterwards, were administered a range of projective techniques for 'pen and paper' self-completion. The projective techniques used were word association, sentence completion, bubble cartoon completion, picture sort and product personification. This was one of the first projects where we used these techniques and it demonstrates well the design pitfalls. We report the findings from one of the groups that participated in the project, 40 full-time and part-time students in the final stages of completing a Business Studies degree. The word association was the first technique administered since it is not too different from what students might expect to find on a questionnaire and leads them in gently to the more unusual techniques. Words relating to feelings such as bored, interested, informed and frustrated were printed randomly over a single page and students were asked to circle only those that corresponded to how they felt as they worked through the library guide. Later, simple counts were made of selected words.

With the sentence completions we were anxious to move away from questionnaire language, and sentence beginnings included, 'the best thing about this product is ...' and 'until I used this product I didn't know that ...' Responses were coded and counted in the same manner as responses to open questions on a questionnaire. With few exceptions, students expressed the view that the guide was most suitable for new library users and was insufficiently informative for experienced users. However, one-third of students learned something about the library that they had not known previously; for example, vacation opening hours, where videos are shelved, how inter-library loans work, and so on.

Bubble cartoons were administered after the sentence completions. We employed computer graphics on this project (Fig. 2) rather than hand draw the cartoons (Fig. 3). The disadvantage of using ready-made computer graphics is that they are usually far too detailed and some researchers prefer to employ hand drawn 'stick' people (Martin & Kennedy, 1994). Compare Fig. 1, where the gender of the participants is left to the imagination of respondents, with Fig. 2, where the gender and age group of participants is specified. As a result, we cannot be sure whether or not the gender and age of the bubble cartoon characters was a factor in the responses we obtained.

In designing the cartoons we decided to focus on typical situations in which students might find themselves using the guide, for example, sitting at a terminal in the library. We considered the types of questions students might ask each other about the guide; whether or not it is easy to use, is it informative, is it worth investing time in using it,

Picture Order	Caption
	No 3. Oh no, its coming back again..!!
	No 1. What, How, Why....What have I done its disappeared. Holy.....!!!
	No 2. Oh no, I hate these things. I feel such an idiot. What do I do now?
	No 4. Let me see...you know its not too bad..when you get the hang of it, its good fun.

FIG 3. Picture arrangement test.

and so on (see Fig. 2). One of the cartoons involved a student at an information desk, where a librarian offered to show the student the guide, explaining that this was where he/she could find all the details about this service. Students' thought bubbles consisted of statements such as 'why doesn't she just answer my query?' Comments in the librarian's thought bubbles fell into two categories, 'don't bother me' and 'you should know this already, you've been here four years'. When we discussed these comments later with students, it emerged that a number of them are embarrassed to ask librarians for information since, as final year students, they would be expected to have this information already. These data, in combination with sentence completion responses on what students learned from the guide, suggested that the guide might be useful for students who may prefer to question an impersonal and non-censorious computer librarian.

The picture sort projective provided valuable data in spite of its poor design. Respondents were given a set of pictures (Fig. 3) and asked to assume that these were photographs taken whilst someone was using the library guide. The photographs were mixed up and the researcher did not know their correct order. Respondents were asked to think about an appropriate order, to number them in this order and to write a caption for each photograph stating what the user was doing or thinking. With hindsight, the range of pictures was far too limited; we should have designed more pictures that depicted a wider range of user behaviour and facial expressions. Additionally, we should have indicated that respondents need only select the pictures they considered most appropriate; that they did not need to use all of them. For example, 'frustration' is not

necessarily a response that respondents might otherwise consider in the context of using the library guide.

In spite of these deficiencies, we did learn something from this projective. Many users placed the frustrated and angry pictures at the start of the picture sequence. The captions with these pictures referred to searching for the guide on a busy and confusing software menu. Other students placed the pictures at the end of the sequence and captions related to frustration and anger at wasting their time on a product that proved boring or of little value to them.

The most popular projective technique we used was also the most unusual and demanding one. Students were asked to imagine that the guide was a person and to complete, on this person's behalf, a dating agency application form that included items such as hobbies and preferred holiday destinations. They enjoyed it precisely because it stretched the imagination and allowed some degree of creativity. When responses to this technique were compared, students were surprised to see how similar they were. Some students were rather disappointed that their 'person' was not as unique as they had expected. Three distinctive persons emerged and students helped interpret them. We describe these very briefly next.

Person 1: A very dull and boring person who takes holidays at local seaside resorts, drives a small hatchback, enjoys train spotting or stamp collecting and television quiz shows.

Person 2: An 'arty' intellectual type who drives a distinctive car such as a VW Beetle, holidays in the Shetlands or one of the smaller Greek islands, is a vegetarian and likes books and classical music.

Person 3: A flashy person, who drives a performance car, takes exotic holidays and buys in to all of the latest consumer technology.

These responses illustrate both the strengths and weaknesses of projective techniques and the importance of involving respondents in their interpretation. Unlike questionnaire items, they encourage respondents to respond from their own frames of reference. When asked to personify the guide, some thought of it as an electronic librarian (person 1); dull, boring, fixated with detail and the minutiae of the library. Others thought of it as a rather superior librarian (person 2) the kind of person who makes a point of being well informed, knows the right way to go about things and lets you know it. Still others personified the library guide in terms of the technology or platform (person 3); expensive and glossy, good to look at but not much underneath it all, or, nice form but not much substance.

Whilst the guide was intuitive to use, easy to navigate and visually attractive, it transports information to users who are in a passive role, absorbing detail. There is no discovery learning or active participation and, for this group, the information in the guide could probably be just as easily obtained from a printed guide. Given student's perceptions of the difficulties involved in gaining access to a computer in the library and then trying to find the library guide on a cluttered software menu, a printed guide may be far more attractive to them.

Projective techniques and the data they generate are interesting; however, researchers will evaluate them on what they can contribute to research compared with more conventional techniques. Many might argue that the findings from this project could have been discovered by other means. An observation study would probably have revealed the problems with access to computers in the library. A focus group might have revealed similar information. However, the time taken to complete the fieldwork was considerably less demanding than either observation studies or focus groups. It took just under 3 hours

for the 40 students to work through the guide, complete the projective techniques and, working in small groups and later as a large group, discuss and offer interpretations of the responses and generate initial conclusions. It should be noted that the researchers took considerably longer to analyse and interpret the data, including the data generated by student discussions on the techniques. In our view, the fact that students found the whole experience fun and involving and were involved as research collaborators rather than as objects of study should not be undervalued. For example, students' comments on the design of the projective techniques were useful, including which ones were most enjoyable, which ones seemed to have less point and why.

Conclusions

Projective techniques are versatile, fun to complete and involving for respondents and researchers. More importantly, due to their unusual and ambiguous nature, they permit respondents to respond from their own frames of reference and can help overcome some of the barriers that deter respondents from expressing imaginative, unusual and negative views, private thoughts and feelings.

The small literature on using projective techniques in academic research illustrates their versatility and usefulness. However, there are few guidelines on the selection of particular techniques and the design of the stimulus materials. Just as they permit respondents to express imagination and creativity, the researcher too needs to use imagination and creativity to produce suitable projective materials.

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