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Using Drawn Images To Prepare Teachers Who Can Envision And Actualize A World Of Educational Quality

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Introduction

Teacher candidates (TCs) enter their pre-service education programs with different learning preferences, lay theories, tacit knowledge, and lifelong set of positive and negative experiences in schools that have formulated their beliefs about schools and schooling (Barclay & Wellman, 1986; Britzman, 1986; Brookhart, & Freeman, D. 1992; Bullough, 1991; Deforges, 1995; Holt-Reynolds, 1992). These beliefs have developed naturally without benefit of instruction and greatly impact a teacher's practice (Lortie, 1975; Clark, 1988). These preconceptions include a) personal experience, b) transmitted knowledge, c) philosophical ideas, d) political viewpoints, e) cultural upbringing and influences, f) ethical practices, g) moral values (Handal & Lauvas, 1987) as well as stereotypes about the roles of teachers and expectations for students (McCombs & Whisler, 1997).

Pre-service teachers are constructing their own vision of teaching while negotiating their way through their apprenticeship of observation (Lortie, 1975) in their field placements. Recognizing and integrating helpful beliefs are an essential aspect of this process (Surgue, 1997), yet few examples of teacher preparation programs that do this could be found (Calderhead & Robson, 1991; Clandinin & Connelly, 1987; Connelly & Clandinin, 1984; O'Brien & Norton, 1991).

TCs each have a unique set of knowledge and experiences. These include their personal learning preferences, every previous school experience of their own as well as the historical and socio-cultural beliefs about education to which they have been exposed. It is onto this palette that teacher educators seek to overlay their teacher preparation knowledge and skills. Examined or unexamined these prior beliefs affect the teacher candidate. The premise of this research is that it is necessary to find ways to allow TCs to draw on and examine these prior beliefs in order to prepare them successfully to teach. This study applied projective methodology to see if TCs could learn about their learning style preferences and educational beliefs through their school drawings.

Problem

The problem addressed in this study was in what ways might teacher educators help TCs examine their beliefs about teaching and learning so that they may affirm, modify, or consider alternatives during their teacher preparation

programs. This research piloted a technique for TCs to use their drawn images of actual and ideal school experiences to allow them to become aware of and examine their beliefs about teaching and learning as a component of their pre-service teacher preparation program. What learning preferences and beliefs would they reveal and would these be consistent?

Literature Review

Beliefs are important in teacher preparation programs because they "cover all the matters of which we have no sure knowledge and yet which we are sufficiently confident of to act upon and also matters that we accept as certainly true, as knowledge, but which nevertheless may be questioned in the future " (Dewey, 1933, p. 6). They help people "to understand themselves and others and to adapt to the world and their place in it" (Pajares, 1992, p. 317). They are a loosely related set of assumptions, some of which are more closely associated than are others (Rokeach, 1968). Numerous researchers (Bandura ,1986; Clark, 1988; Florio-Ruane & Lesmire, 1990; Lortie, 1975; Mumby, 1982; Nespor, 1987; Rokeach, 1968) have all reported that beliefs about teaching persist even when they are no longer accurate representations of reality and that people do not seem to try to rid themselves of beliefs that they no longer hold. Florio-Ruane and Lensmire (1990) found that the evaluations children make of teachers and teaching as children survive nearly intact and do not change even as teachers emerge as competent professionals.

Richardson (1996) reported that interest in studying attitudes and beliefs began in the 1950's, had a resurgence in the 1970's, and is again of high interest especially to teacher educators (Ben-Peretz, 1990; Civil, 1993; Bolin, 1990; Feiman-Nemser & Buchmann, 1989; Hollingsworth, 1989; McDiarmid, 1990; Tickle, 1991; Zeichner, Tabachnick, & Densmore, 1987). The studies that reported the most success included having the TCs actively examine and apply their beliefs while in the program. (Clandinin & Connelly, 1987; Eisenhart, Schrum, Harding, & Cuthbert, 1988; Korthagen, 1993; Morine-Dershimer, 1989; Serow, Eaker, & Forrest, 1994; Von Wright, 1997).

Theoretical Background

Leading humanistic psychologists like Murray, Maslow and Allport accepted the premise that the individual's subjective self-report of mental activities should be used to study human behavior. Stephenson (1972) said that data for such judgments could be taken from objective measurements (observations that can be made by others or by a technical piece of apparatus), but that only the individual being studied can provide subjective data. They believed that humans, unlike other animals, have the ability to make choices about their actions from their unique background and experiences (Maddi & Costa, 1972).

A large number of projective techniques have been developed. These tend to use a relatively unstructured task and unlimited responses (Anastasia, 1988). Clark (1995) reported that these same characteristics contributed to the continuing

controversy about the relative merits of these techniques. Catterall and Ibbotson (2000) reported that subjects found projective tasks fun and engaging especially when respondents become involved in their analysis and interpretation. Fisher (1993) found that projective tasks made it easier for respondents to reveal sensitive information than a quantitative scale did. Although projective techniques lost popularity in the 1960's, Piotrowksi, Keller, and Ogawa (1993) found that they are now used worldwide.

Research on Drawing

Drawings have been subject to similar criticism to that of other projective techniques (Holtzman, 1993; Knoff, 1990; Motta, Little, & Tobin, 1993 a & b). Falk (1981) suggested that drawing techniques allowed respondents to communicate their feelings indirectly; however, he cautioned against using poorly conceived categories of interpretation. Knoff (1993), in a comprehensive review of drawing research, concluded that the benefit of drawings was that they could contribute to a better understanding of the individual.

Piaget and Inhelder (1971) reported on the cognitive implications of art when they stated that they believed that drawing consists of externalizing previously internalized mental images. Goodenough (1962) reported that children's drawings reflected more than visual imagery. She found that they also reflected cognitive development and had intellectual meaning. More recently Gardner (1983), Gamradt and Staples (1994), Golumb (1992), and Malchiodi (1998) have

documented that important cognitive and affective information is conveyed in children's drawings.

The kinetic approach, which has been adapted for use in this study, has generated much interest among clinicians and researchers because it seems to provide a richer source of data than do static drawings (Andrews & Janzen, 1988; Habenicht, Shaw, Brandley, 1990; Knoff, 1983; McPhee & Wenger, 1976; Meyers, 1978; Mostkoff & Lazarus, 1983; Nuttall, Chieh, & Nuttall, 1988; O'Brien & Patton, 1974; Prout, 1983; Prout & Celmer, 1984; Raskin, & Bloom, 1979; Raskin & Pitcher, 1977, Reynolds, 1978; Sarbaugh; 1982, Schneider, 1978; Walton, 1983). This researcher extended the kinetic school drawing technique (KSD) by asking students, who had been identified as gifted, to draw their ideal as well as their actual school experiences. She has successfully used students' actual and ideal school drawings to determine students' attitudes about teaching and learning (1995) as well as their learning preferences (2004).

Sack (1997) found that most of the study of drawings had been done with children's drawings and by psychologists rather than by educational researchers. In her study she had student teachers, students in the classroom, and the cooperating teachers draw pictures of the student teacher at work in the classroom twice during the semester. The student teachers in the study were asked to look for patterns in their practice by reflecting on the pictures. The follow-up interviews with all the participants showed that the pictures revealed key

components of the classroom environment. Tovey (1996) used students' drawings to help teachers see themselves more clearly. Other studies used drawings in educational or marketing research. They asked children or adults to draw a teacher, a classroom, or an ideal classroom or idea as a component of the study (Harrison, 1999, Chin & Brewster, 1993; Mathews, 1996, Montasser, Cole, & Fuld, 2002).

Methodology

In this mixed method approach that used concurrent quantative and qualitative methodology (Creswell, 2003; Freeman, deMarrais, Presissle, Roulston, & St. Pierre, 2007; Tashakkori & Teddlie, 2003), TCs were asked to draw a picture of what for them, as a student, would be an actual and an ideal classroom. Expert raters determined what broader assumptions about teaching and learning the TCs revealed in their pictures. The results of these analyses were compared to the results of the self-report data to see how they corroborated the TCs' beliefs. This study was one of a series done by this researcher (Armstrong, 1994, 2004, 2005, 2006) to promote reflective practice in teacher education programs. It was done two consecutive years and the combined findings are reported here.

Subjects

The subjects were participants in a yearlong initial teacher preparation program for returning adults. The study included 115 particpants which included

67 elementary TCs (53 female and 14 male); and 47 secondary TCs (27 female and 20 male). One person did not identify gender.

Instruments

The school drawing instrument that this researcher has named Classroom Visions includes two tasks:

> *Kinetic School Drawing Form-Actual (KSD-A.)* Draw a school picture (Prout & Phillips, 1974; Knoff & Prout, 1991). Used with permission. (See Figure 1a)
>
> *Kinetic School Drawing Form- Ideal (KSD-I).* Draw a school picture that is ideal for you (Armstrong, 1995). (See Figure 2a)

For each of the pictures TCs were asked to draw what would be either an actual or ideal school experience and to complete 18 questions on the learning styles they preferred in the picture they drew. The questions were in a Likert Scale format that ranged from 1-5. Some questions contained two aspects of a preference as, for example in question 1 for which a selection of the number 1 meant the respondent had a preference for quiet and the selection of a 5 meant a preference for noise. Other questions, such as number 8, allowed her or him to indicate on a continuum whether working with their hands was a preference or not a preference. These questions were developed from a review of the research on learning styles (DeBello, 1990; Dunn, 1990; Dunn, Dunn & Price, 1989 & 2000; Dunn, Beaudry, & Klavas, 1989; Dunn, Griggs, Olson, Beaskey, & Gorman,

1995; Fraser, 1986 & 1989; Gregorc, 1982; Kolb, 1984; Lovelace, 2002; Messink, 1994; Moos, 1979 & 1987). The questions are shown in Figure 1b and Figure 2b.

Procedure

At the beginning of the fall semester, the TCs were introduced to Classroom Visions as the first of a number of reflective techniques that they would be using throughout the two semesters of their program that combined coursework with a yearlong internship at a single school. At the seminar before the KSD-Actual was due, this researcher went over the instructions for completing the KSD-A.

These were:

> Think of all your school experiences. Now draw a school picture. Put you, the teacher, and a friend or two in the picture. Make sure everyone is doing something. Label the people in the drawing and complete the 18 questions on learning style preferences.

The TCs were told that they should not be concerned about their artistic ability and could use symbols or stick figures if they were more comfortable with those formats. They were reminded that the image should be one of their *own* experiences as a student and *not* the students with whom they were now working in the field. They were told that it typically takes about twenty minutes to complete a picture and that it should be done in pencil.

At the beginning of the seminar the following week, the TCs were asked complete their KSD-I in class. The directions for this were:

> Think of what might be an ideal learning experience for you and draw it. Put you, the teacher, and a friend or two in the picture. Make sure everyone is doing something. Label the people in the drawing and complete the 18 questions on learning style preferences.

Once the TCs had completed their second picture, they were referred to the scoring directions for the learning preferences that this researcher had developed. These asked them to first look over their responses to the 18 questions on their KSD-A and, for each question, for which they had marked a 1 or a 5, to record that on the scoring matrix. They were to repeat this procedure for their ideal picture. The completed matrix provided a summary of the learning preferences that had emerged in both drawings. A preference was inferred from a choice of a 1 or a 5 on each picture. A stronger preference was inferred if the respondent selected the same response as a preference in both pictures. TCs also filled out a short questionnaire about their perception about how accurate the actual, ideal or combined pictures were in revealing their learning preferences. TCs were also asked to report if they though thought the preferences that they selected on their actual, ideal or both pictures were the most accurate.

Once this recording task was completed, this researcher initiated a group discussion of how, in addition to revealing information about learning styles, the

pictures contained information about each individual's attitudes and beliefs about teaching and learning. They were asked to reflect on these and then with a partner generate three lists of attributes of a good teacher, an effective teacher, and an ineffective teacher. The full group then considered the implication of these beliefs for their practice teaching experiences and for their own classroom practice.

Data Analysis

The data was analyzed for frequency of response, and consistency of preference. A response was defined as all possible responses from 1-5 for each question. Since the questions were designed to have the strongest valence of the belief represented by a 1 or a 5, this researcher defined a preference as response of a 1 or a 5. Consistency of a preference was defined as when the respondent selected that same preference in both pictures. The selection of a response of 2, 3 or 4 was not considered a preference for purposes of this study. When $\geq$ 60% of the sample selecting that preference in their actual picture also selected that same response in their ideal picture, that preference was defined as consistent.

Two raters analyzed a series of pictures from a prior cohort and affirmed that the themes in the pictures in the current study were consistent with those in the 1995 study. These themes were: the student's behavior, the teaching style, and the learning environment. Raters worked independently to determine whether an

element was present, not present, or could not be determined. Inter-rater reliability was 90%.

Statistical analyses compared the self-report data between actual and ideal pictures for frequency of response, consistency of preferences and the summary of the content analyses done by the expert raters. The data was analyzed for the full sample, by gender (male or female), level (elementary or secondary), and by gender and level combined.

The quantitative data for the full sample was analyzed using Wilcoxon Signed Rank test that provides a *z* statistic and corresponding two-tailed p-value for differences for both the self-report questions and the expert raters' data. The analyses for significance for the data by gender or level were done using the Post-Hoc Mann Whitney U. The analyses for gender and level were done using Kruskal-Wallis test and corresponding two-tailed p-value to investigate for significance. Differences $\leq .05$ were considered significant.

Tallies were made of the respondent's perception of the accuracy of the learning preference data and of the open-ended responses that the TCs made to the three discussion prompts: traits of a good teacher, an effective teacher, and an ineffective teacher.

Results

The results of these studies strongly supported the use of the actual and ideal school drawings as a way to determine TCs learning preferences and beliefs about teaching and learning.

Insert Table 1 About Here

TCs Self-Report on Learning Preferences

School Drawings Frequency of Responses

Table 1 shows the summary of the responses of the TCs to each of the 18 prompts for their actual and ideal school drawings. They show a wide range of responses. No single learning preference was predominant nor was any preference selected by many more than half of the respondents. The 5 preferences selected most frequently were: looking or seeing, self-directed, persistent, prefers a challenge, and hands-on learning.

There was a significant difference in the responses of the TCs on only a few preferences when comparing responses on the KSD-A to those on the KSD-I pictures for the full sample. These were for the preferences: hands-on learning ($Z = -2.547$, $p = .011$), preferring snacks ($Z = -3.684$, $p = .001$), group work ($Z = -2.038$, $p = .042$), working with a partner ($Z = -2.797$, $p = .005$), listening or

speaking (Z = -2.147, p = .032), learning with one's body (Z = -3.622, p = .001), moving when learning (Z = -2.124, p = .034), and learning in different ways (Z= -2.020, p = .043). The significant differences for these preferences showed that more TCs had significantly stronger preferences on their KSD-I than they had on their KSD-A.

There were very few significant gender and or level differences; however, the differences that emerged were consistent with stereotypical gender and level beliefs. There were differences in the responses of the female elementary TCs when compared to those of the female secondary TCs on the preference "completed their best work for others" (U=465.500, p=. 013) and differences in the way female secondary TCs and males at the secondary level reported the same preference (U= 126.00, p =. 002). It was more important to the elementary TCs that work to please others. There were differences in the responses in the ways female TCs at the elementary level and those at the secondary level "thought it was important to finish what they started "(U=489.500, p= .013). These other-directed behaviors were more important to the females than the males in this study. More females than males TCs also had different responses to "wanting snacks" (Z = -3.770, p = .001), "to working with a partner" (Z = -2.553, p = .033). In these comparisons, these differences emerged as stronger preferences in the ideal.

More male, secondary TCs than male elementary TCs had different responses on their KSD-I to the preference for "hands-on learning" (Z= -2.585, p = .010) and "being able to move around when they learned" (Z= -2.484, p = .013). More secondary than elementary TCs had different responses being able to learn "by listening or speaking "(Z = -2.549, p = .011), "with their body" (Z = -2.125, p = .034), and to "decide what they wanted to do" (Z = -2.096, p = .036).

More secondary than elementary TCs had non-consistent responses for being able to "learn by listening or speaking" (Z = -2.549, p = .011), "with their body" (Z = -2.125, p = .034), and to "decide what they wanted to do" (Z = -2.096, p = .036). Overall the secondary TCs envisioned an ideal learning environment that was a more active and interactive ideal than they had depicted in their actual pictures.

Insert Table 2 About Here

Consistency of Preference Results

The TCs had a median of seven preferences on their actual pictures and 8.50 on their ideal pictures. There was a range of seventeen on both. The mode was six preferences on their actual pictures and nine on their ideal pictures.

Table 2 shows the summary of the percentage of respondents who selected a preference (a 1 or a 5) in their actual who also selected that same response in their ideal picture. Seventeen of the 18 preferences met or exceeded the threshold for ≥ 60% for consistency at least once. Only the preference "noisy or quiet" did not. For the 8 preferences where the choice was to have it as a preference or not to have it be a preference, if the respondent selected the preference, they were consistent with that preference in the ideal 64-87% of the time. If that choice was not a preference, it was consistent 20-56% of the time. It appears that there was far more consistency when the choice was a preference than when it was not.

An interesting picture emerges for the preferences where both a 1 and a 5 could be a preference. For example, while persistent and not persistent both showed great consistency (87% and 83%), the numbers of TCs selecting persistence as a preference (n=56) were nearly twice those who reported themselves as being non-persistent (n=29). The two preferences that paired a preference for "working alone", once with a choice of "working with a group" and once for "working with a partner", showed TCs being much more consistent if they choose the "not alone" option. The percentage of TCs being consistent in having a preference for bright or dim light was the same (60%) but not the number of TCs selecting it as a preference (n=40, n=5). More importantly, both the percentages and the numbers of TCs being consistent in the preferences that were the most selected were very high. These preferences were: looking or

seeing (74%, n=57), self-directed (77%, n=46), persistent (87%, n=56), prefers a challenge (85%, n=48) and hands-on (74%, n=49). In addition, 77% of the 43 TCs who said they liked "to learn in different ways" were consistent.

S*ummary of TCs' Self-Report*

The TCs provided two additional self-report components. The first was an assessment of their perception of the accuracy of their learning preference information, and the second was their summary of their discussion about the qualities of a good, effective, and ineffective teacher.

The TCs reported that they thought it was about equal between the accuracy of the learning preference information that emerged on their ideal forms (45.2%) as it was for the combination of the two pictures (47.9%). Only 6.8% thought the actual picture alone was accurate.

The TCs generated three lists of qualities of teachers. They listed 123 different attributes of a good teacher with very few multiples. The multiples were on the following qualities: passionate (n=9), knowledgeable (n=8), flexible (n=6), builds relationships (n=4), treats students with respect/care (n=4), interacts (n=4), engaging (n=4). Other examples of qualities of a good teacher included: peaks student interest, facilitates learning, collaborative experience, knows their students, motivates students, and allows students to make discoveries.

They listed 83 different qualities of an effective teacher. The multiples on this list included: responsive to learning styles (n=15), flexible (n=8), caring/kind

(6) allows interacting (n=4), engaging (n=4), organized, (n=4) conveys knowledge (n=3), monitoring (n=3). Other examples included: lets students do the work but helps with problems, buffer/mediator, can put things at the student's level, positive expectations, able to guide, checks for understanding.

The final list was the traits of an ineffective teacher and had 64 different responses. The multiples included: learning styles not taken into account (n=11), not flexible (10), same old routine/busy work (9), biased (8), poor management skills (4), assesses only 1 way (4). Other examples included were: unapproachable, lectures too much, neglects special need students, does not try new approaches, and abuses power over students.

The TCs had many, varied ways to describe the teaching styles of a good, an effective, and an ineffective teacher. These were closely related to the their own experiences as students. It is not clear whether learning styles would have emerged so strongly if the discussion had taken place without the benefit of the context of the school drawings with learning preference prompts.

Summary of the Content of the Pictures

Insert Table 3 About Here

Table 3 includes the summary of the assessments of the content of the pictures that two expert raters determined were in the TCs actual and ideal

pictures. The raters decided whether an element was present, not present, or could not be determined. There were four categories of content analyzed: student behavior, teacher's instructional practice, teacher behavior, and learning resources. In both the actual and ideal settings, virtually all TCs depicted students engaged in academic behavior, 80% engaged in listening/reading/ activities, about 60% working with peers, very low percentages of teachers interacting with students. Very few pictures included a computer or teachers teaching using computers. While there was a significant difference found in the showing of computers between actual and ideal pictures ($Z = -2.180$, $p = .029$), the number total number of computers shown remains small going only from 3 to 14. The only other significant difference was in direct instruction ($Z = -3.179$, p. = .001).

In their KSD-I pictures, more elementary male TCs than females depicted a learning environment in "a specialized setting" ($U= 264.5$, $p = .004$). More female elementary TCs depicted a learning environment in their ideal pictures that "had students at desks/tables or chairs" ($U= 402.0$, $p=. 034$) and more female secondary TCs than secondary male TCs did the same ($U= 192.0$, $p=. 022$). More female elementary TCs showed the "teacher giving direct instruction" in their KSD-I ($Z =- 2.483$, $p =. 013$) and more female secondary TCs showed a learning environment with a computer ($Z = -2.000$, $p =. 014$) and with visuals ($Z = -2.000$, $p=. 046$).

Discussion

This study sought to determine if the Classroom Visions technique (KSD-A & KSD-I) would reveal TCs' learning preferences and their beliefs about teaching and learning. It is clear from the analyses that they do. The TCs in this study were able to communicate consistent learning preferences that they felt were accurate and to represent both historical and current beliefs about teaching and learning. Their images imply that they believe that effective teachers take into account their students' learning styles. TCs should find it beneficial to understand their own learning preferences for both guiding their own learning and that of their students. The pictures also served as a helpful context for the TCs to examine some of their beliefs about the desirable and undesirable attributes of a teacher. These classroom visions served as a springboard from which they could affirm or modify their beliefs about teaching and learning. They helped explain TCs' frustrations when their own visions were not actualized or allowed within their field placement. Finally they allowed limitations in their visions to be seen.

The visions that the TCs had for teaching and learning in their actual and ideal school pictures were far more similar than they were different. Figure 1 (a and b) and Figure 2 (a and b) show the drawings of the same elementary TC. Although the settings changed from a traditional classroom to an outdoor setting, her learning preferences for hands-on, discovery learning remained consistent both for herself as an individual and representative of those of the total sample. She is also consistent with her peers on the qualities of a good teacher: one who

encourages, supports, and challenges a student to do the best possible work. In Figure 3, the secondary level TC has drawn a metaphor and describes a different kind of teacher. Yet this teacher, though somewhat non-traditional, shares the same qualities as in the other figures. While these examples are consistent with the programmatic goals of our teacher preparation program, about one-half of the samples depicted the opposite values. These teacher-centered approaches are the ones that the TCs typically see in their field-based practicum.

The images the TCs depicted gave important context and example to help them become aware of their beliefs about teaching and learning. The verbs that the TCs used to describe their good and effective teachers were found far more often in their ideal pictures than in their actual ones. The teaching behaviors of the ineffective teachers could be seen in the 12% of the KSD-A's that were not positive pictures. Lortie (1975) said that those with positive school experiences tend to be those who go into teaching. This is consistent with the findings of this study where 88% depicted a positive school experience in their actual school drawing and 100% did in their ideals.

A picture is worth a thousand words. This line of inquiry began by asking K-8 students describe their ideal learning experience and the qualities of their ideal teacher. It soon became clear that the words alone were not able to communicate without a context. This researcher could not envision what these words really meant to students so thus began the research with the school

pictures. The lists the TCs generated in this study have the same limitations. What does a passionate teacher look like? The figures included in this paper provide clear examples. The K-8 students' images and preferences in that initial study (Armstrong, 1995) were very similar to those of the TCs just as were their verbal responses. However, far more significant differences emerged between their actual and ideal pictures in the earlier study with students than in this current one with pre-service teachers. The K-8 students were far more likely to draw a non-traditional setting in their ideal than were the TCs. In their ideal pictures, about a quarter of the students depicted technology in the classroom or replacing the teacher. The students were able to envision ideals that were far different from their own school experiences. The beliefs the TCs depicted in their actual school experiences were indeed typical of schools today. With the important exception of direct instruction, their ideal visions were virtually identical to their actual pictures. The absence of computers and computer-assisted instruction was particularly striking. The purpose of this study was to help TCs understand their learning preferences and beliefs about teaching and learning. The sequence of additional reflective practices (Armstrong & Hipp, 2006) as well course and fieldwork offer additional opportunities for them to affirm or modify their beliefs. The pictures and the words together allow the TCs to examine and share their visions with others.

Conclusion

The actual and ideal school drawings that comprise Classroom Visions go beyond previous learning style research that primarily relied on verbal self-reports. It adds to the literature on understanding drawings and the use of projective methodology. The consistency that emerged between the two pictures supports the use of this technique with adults to determine their learning preferences. Additional studies should be done to explore other applications and the use of Classroom Visions with in-service as well as pre-service teachers. While the viability of this technique was supported by the findings in this study, it may be the limited visions that emerged that perhaps should concern and challenge teacher educators most. We must prepare teachers who can actualize what is truly ideal for all students.

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Table 1
Frequencies and percentages of Teacher Candidates' (TCs) responses on Actual (KSD-A) and Ideal (KSD-I) school pictures (N=115)

Learning Preference	Responses on KSD-A				
	1	2	3	4	5
1. Noisy to Quiet	11.3% (N=13)	16.5 (19)	35.7 (41)	12.2 (14)	24.3 (28)
2. Dim light or Bright light	4.3 (5)	7.8 (9)	31.3 (36)	21.7 (25)	34.8 (40)
3. Prefers to snack to Not to snack	14.8 (17)	11.3 (13)	31.0 (15)	10.4 (12)	50.4 (58)
4. Temperature: Warm to Cool	14.9 (17)	18.4 (21)	41.2 (47)	15.8 (18)	9.6 (11)
5. Prefers group work to Prefers alone	33.9 (39)	22.6 (26)	10.4 (12)	15.7 (18)	17.4 (20)
6. Prefers partner to Prefers alone	19.1 (22)	24.3 (28)	16.5 (19)	18.3 (21)	21.7 (25)
7. No adult oversight to Prefers adult oversight	10.4 (12)	13.0 (15)	22.6 (26)	33.0 (38)	20.9 (24)
8. Prefers to use hands to Not a preference	42.6 (49)	20.9 (24)	17.4 (20)	13.0 (15)	6.1 (7)
9. Prefers seeing/looking to Not a preference	49.6 (57)	27.0 (31)	13.9 (16)	5.2 (6)	4.3 (5)
10. Prefers listening/speaking to Not a preference	22.6 (26)	24.3 (28)	29.6 (34)	20.9 (24)	2.6 (3)

Table 1 Continued
Frequencies and percentages of Teacher Candidates' (TCs) responses on Actual (KSD-A) and Ideal (KSD-I) school pictures (N=115)

Learning Preference		KSD-A				
		1	2	3	4	5
11. Prefers learning with body to Not a preference		20.0 (23)	22.6 (26)	16.5 (19)	18.3 (21)	22. (26
12. Prefers to move around to Not a preference		26.1 (30)	25.2 (29)	21.7 (25)	17.4 (20)	9. (11
13. Learn in different ways to prefers to way	Learn in same	37.4 (43)	30.4 (35)	15.7 (18)	9.6 (11)	7. (8
14. Prefers to decide what to do to prefers	Clear directions	9.6 (11)	12.2 (14)	27.8 (32)	27.0 (31)	23. (27
15. Does best work when reminded to is Self-directed		5.3 (6)	10.5 (12)	18.4 (21)	25.4 (29)	40. (46
16. Persistent to is Not persistent		48.7 (56)	12.2 (14)	4.3 (5)	9.6 (11)	25. (29
17. Prefers a challenge to	Not a preference	41.7 (48)	19.1 (22)	28.7 (33)	6.1 (7)	4. (5
18. Prefers afternoons to	Prefers mornings	19.3 (22)	12.3 (14)	23.7 (27)	19.3 (22)	25. (29

Note: Teacher candidates could select a response from 1 to 5 to each question. Responses of "1" or "5" were considered a preference. Responses of 2, 3, or 4 were not considered a preference in this study.

Table 2
Summary of Consistency of Teacher Candidates' (TCs) Learning Preferences in their Actual (KSD-A) and Ideal (KSD-I) School Pictures

Learning Preference	Number of TC Selecting A "1" or a "5" in KSD-A	Percent of this number who were consistent from KSD-A to KSD-I
1. Noisy	13	15.4%
Quiet	28	35.7
2. Dim Light	5	60.0
Bright Light	40	60.0
3. Prefers to snack	17	76.5
Not to snack	58	56.1
4. Temperature: Warm	17	70.6
Cool	11	56.1
5. Prefers group work	39	64.1
Prefers alone	20	35.0
6. Prefers partner	22	63.6
Prefers alone	25	32.0
7. No adult oversight	12	58.3
Prefers adult oversight	24	62.5
8. Prefers to use hands	49	73.5
Not a preference	7	28.6
9. Prefers seeing/looking	57	75.4
Not a preference	5	40.0
10. Prefers listening/speaking	26	69.2
Not a preference	3	33.3

Table 2 continued
Summary of Consistency of Teacher Candidates' (TCs) Learning Preferences in their Actual (KSD-A) and Ideal (KSD-I) School Pictures

	Number of TCs Selecting A "1" or a "5" in KSD-A	Percent of this number who were consistent from KSD-A to KSD-I
11. Prefers learning with body	23	82.6
Not a preference	26	38.5
12. Prefers to move around	30	80.0
Not a preference	11	36.4
13. Learn in different ways	43	76.7
Learn in same way	8	
14. Prefers to decide	11	36.4
Prefers clear directions	27	66.7
15. Does best work when reminded	5	
Self-directed	46	76.1
16. Persistent	56	87.3
Not persistent	29	82.8
17. Prefers a challenge	48	85.4
Not a preference	5	20.0
18. Prefers afternoons	22	52.4
Prefers mornings	29	72.4

Note: Teacher candidates could select a response from 1 to 5 to each question. Responses of "1" or "5" were considered a preference. Responses of 2, 3, or 4 were not considered a preference in this study. The percentage of consistency reported is the percent of TCs who chose a "1" or "5" in their KSD-A who also selected that response on their KSD-I.

Table 3

Raters' Assessments of Teacher Candidates' (TCs) Instructional Beliefs in Actual (KSD-A) and Ideal (KSD-I) School Pictures (N=115)

	KSD-A			KSD-I		
	Yes	No	C.N.D.	Yes	No	C.N.D.
Student Behavior is						
Academic	96.5% (N=111)	2.6 (3)	.9 (1)	95.7 (110)	1.7 (2)	2.6 (3)
Social with peers	60.5 (64)	37.4 (43)	1.7 (2)	67 (77)	30.4 (35)	2.6 (3)
Off task	2.6 (3)	94.8 (109)	.9 (1)		99.1 (114)	.9 (1)
Kinesthetic	43.5 (50)	54.8 (63)	1.7 (2)	40.0 (46)	55.7 (64)	4.3 (5)
Undesirable	3.5 (4)	94.8 (109)	.9 (1)		99.1 (114)	.9 (1)
Listening/Reading/Writing	80.0 (92)	18.3 (21)	1.7 (2)	83.5 (96)	13.0 (15)	3.5 (4)
Using technology	7.0 (8)	92.2 (106)	.9 (1)	11.3 (96)	87.8 (101)	.9 (1)
The Teacher is using						
Direct instruction	40.9 (47)	50.4 (58)	8.7 (10)	27.8 (32)	68.7 (32)	3.5 (4)
Indirect instruction	47.0 (47)	40.9 (47)	12.2 (14)	66.1 (76)	27.0 (31)	7.0 (8)

Table 3 Continued

Raters' Assessments of Teacher Candidates' (TCs) Instructional Practice attributes and Beliefs in Actual (KSD-A) and Ideal (KSD-I) School Pictures

	KSD-A			KSD-I		
	Yes	No	C.N.D.	Yes	No	C.N.D.
Technology as a teacher		99.1 (114)	.9 (1)	1.7 (2)	96.5 (111)	1.7 (2)
The teacher is						
Interacting	7.8 (9)	86.1 (99)	5.2 (6)	8.7 (10)	87.5 (101)	3.4 (4)
Unavailable	3.5 (4)	93.0 (107)	3.5 (4)	3.5 (4)	93.9 (108)	2.6 (3)
Barricaded	8.7 (10)	87.8 (101)	3.5 (4)	10.4 (12)	87.7 (100)	1.7 (2)
The learning environment has						
A computer	2.6 (3)	96.5 (111)	.9 (1)	12.2 (14)	87.0 (100)	.9 (1)
Visuals	5.2 (6)	93.9 (108)	.9 (1)	6.1 (7)	93 (107)	.9 (1)
A chalk/white board	30.4 (35)	67.0 (77)	2.6 (3)	31.3 (36)	65.2 (75)	3.5 (4)
Student desks/tables chairs	70.4 (81)	28.7 (32)	1.7 (2)	69.6 (80)	28.7 (33)	1.7 (2)
Teacher at desk/ table/chair	40.9 (47)	57.4 (66)	1.7 (2)	48.7 (56)	49.6 (57)	1.7 (2)

Table 3 Continued
Raters' Assessments of Teacher Candidates' (TCs) Instructional Practice attributes and Beliefs in Actual (KSD-A) and Ideal (KSD-I) School Pictures

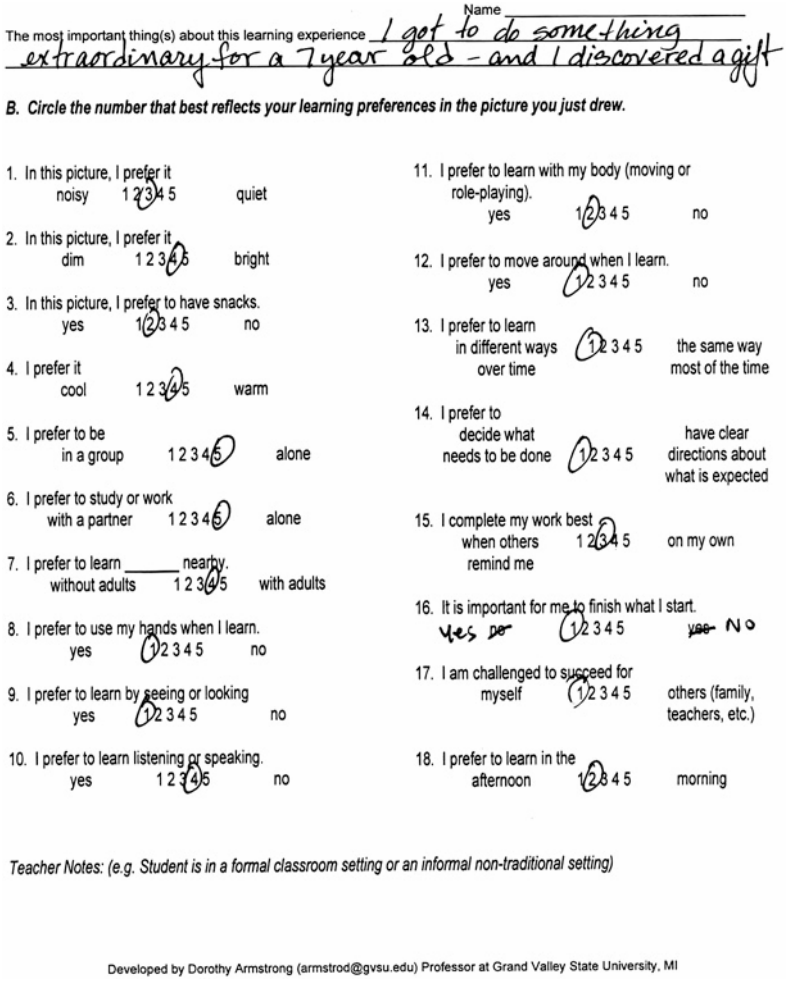
	KSD-A			KSD-I		
	Yes	No	C.N.D.	Yes	No	C.N.D.
TC at desk/table/chair	59.1 (68)	38.3 (44)	2.6 (3)	69.6 (80)	28.7 (33)	1.7 (2)
Peers at desk/table chair	66.1 (76)	32.2 (37)	1.7 (2)	75.7 (87)	22.6 (26)	1.7 (2)
The TC depicted a positive experience	87.8 (101)	9.6 (11)	1.7 (2)	100 (115)		

Note. C.N.D. means that the raters could not determine whether or not that the element was depicted in the picture.

Figure 1a


Elementary Teacher Candidate
Actual School Picture: Classroom Visions
A. Think of all your learning experiences and draw one of them. Put yourself, the teacher, and a friend or two in the picture. Make sure everyone is doing something. Label the people in the drawing.
...Hmm
Would you like to try?..
Sure!
It's Spring!
Wow, I can make things & it's fun!
In this picture, I am making a bulletin board
The teacher(s) Mrs. ——— didn't tell me I could make a contribution to my class with art - She gave me
~~My friend(s)~~ a challenging project and let me find out for myself... this ends up being a landmark
Developed by Dorothy Armstrong (armstrod@gvsu.edu) Professor at Grand Valley State University, MI
pom which all else was spring. Art major, BFA, drafts-man, technical illustrator, graphic design, sign shop co-owner, Art Director, computer graphics and now... teacher. Best of All!

Figure 1b



Name _____

The most important thing(s) about this learning experience I got to do something extraordinary for a 7 year old - and I discovered a gift

B. Circle the number that best reflects your learning preferences in the picture you just drew.

1. In this picture, I prefer it
   noisy 1 2 3 4 5 quiet

2. In this picture, I prefer it
   dim 1 2 3 4 5 bright

3. In this picture, I prefer to have snacks.
   yes 1 2 3 4 5 no

4. I prefer it
   cool 1 2 3 4 5 warm

5. I prefer to be
   in a group 1 2 3 4 5 alone

6. I prefer to study or work
   with a partner 1 2 3 4 5 alone

7. I prefer to learn _____ nearby.
   without adults 1 2 3 4 5 with adults

8. I prefer to use my hands when I learn.
   yes 1 2 3 4 5 no

9. I prefer to learn by seeing or looking
   yes 1 2 3 4 5 no

10. I prefer to learn listening or speaking.
    yes 1 2 3 4 5 no

11. I prefer to learn with my body (moving or role-playing).
    yes 1 2 3 4 5 no

12. I prefer to move around when I learn.
    yes 1 2 3 4 5 no

13. I prefer to learn
    in different ways 1 2 3 4 5 the same way
    over time most of the time

14. I prefer to
    decide what needs to be done 1 2 3 4 5 have clear directions about what is expected

15. I complete my work best
    when others remind me 1 2 3 4 5 on my own

16. It is important for me to finish what I start.
    Yes 1 2 3 4 5 ~~no~~ NO

17. I am challenged to succeed for
    myself 1 2 3 4 5 others (family, teachers, etc.)

18. I prefer to learn in the
    afternoon 1 2 3 4 5 morning

Teacher Notes: (e.g. Student is in a formal classroom setting or an informal non-traditional setting)

Developed by Dorothy Armstrong (armstrod@gvsu.edu) Professor at Grand Valley State University, MI

Figure 2a

Ideal School Picture: Classroom Visions

A. Think of what might be an ideal learning experience for you and draw it. Put yourself, the teacher, and a friend or two in the picture. Make sure everyone is doing something. Label the people in the drawing.

In this picture, I am Outside, learning about Pond life, habitat with my partner

The teacher(s) is watching - adding info or answering questions

My friend(s) we are both finding good things to write about

Developed by Dorothy Armstrong (armstrod@gvsu.edu) Professor at Grand Valley State University, MI

Figure 2b

The most important thing(s) about this learning experience I am learning thru experience & experiment, guided but not controlled

B. Circle the number that best reflects your learning preferences in the picture you just drew.

1. In this picture, I prefer it
   noisy 1 2 3 4 5 quiet
2. In this picture, I prefer it
   dim 1 2 3 4 5 bright
3. In this picture, I prefer to have snacks.
   yes 1 2 3 4 5 no
4. I prefer it
   cool 1 2 3 4 5 warm
5. I prefer to be
   in a group 1 2 3 4 5 alone
6. I prefer to study or work
   with a partner 1 2 3 4 5 alone
7. I prefer to learn _____ nearby.
   without adults 1 2 3 4 5 with adults
8. I prefer to use my hands when I learn.
   yes 1 2 3 4 5 no
9. I prefer to learn by seeing or looking
   yes 1 2 3 4 5 no
10. I prefer to learn listening or speaking.
    yes 1 2 3 4 5 no
11. I prefer to learn with my body (moving or role-playing).
    yes 1 2 3 4 5 no
12. I prefer to move around when I learn.
    yes 1 2 3 4 5 no
13. I prefer to learn
    in different ways 1 2 3 4 5 the same way
    over time most of the time
14. I prefer to
    decide what 1 2 3 4 5 have clear
    needs to be done directions about
    what is expected
15. I complete my work best
    when others 1 2 3 4 5 on my own
    remind me
16. It is important for me to finish what I start.
    Yes ~~no~~ 1 2 3 4 5 ~~yes~~ NO
17. I am challenged to succeed for
    myself 1 2 3 4 5 others (family,
    teachers, etc.)
18. I prefer to learn in the
    afternoon 1 2 3 4 5 morning

Teacher Notes (Setting is formal or informal.):

	Actual	Ideal		Actual	Ideal	
1.			noisy			quiet
2.			dim		✓	bright
3.		✓	snacks			Not
4.			cool			warm
5.			group	✓		alone
6.			partner	✓	✓	alone
7.			no adult			adult
8.	✓	✓	hands			not
9.	✓	✓	seeing			not

	Actual	Ideal		Actual	Ideal	
10.			listening			not
11.		✓	with body			not
12.	✓	✓	moving			not
13.	✓	✓	Different way			same
14.	✓		self-directed			others
15.			reminders		✓	not
16.	✓	✓	persistent			not
17.	✓	✓	self-motivated			others
18.		✓	afternoon			morning

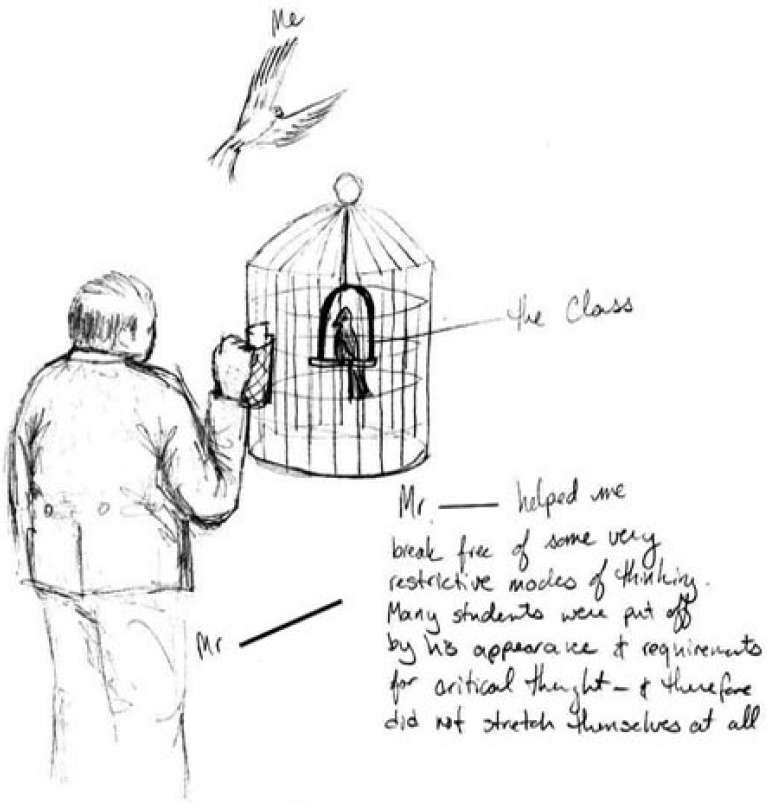
Developed by Dorothy Armstrong (armstrod@gvsu.edu) Professor at Grand Valley State University, MI

Figure 3a

Secondary Teacher Candidate

Actual School Picture: Classroom Visions

A. Think of all your learning experiences and draw one of them. Put yourself, the teacher, and a friend or two in the picture. Make sure everyone is doing something. Label the people in the drawing.



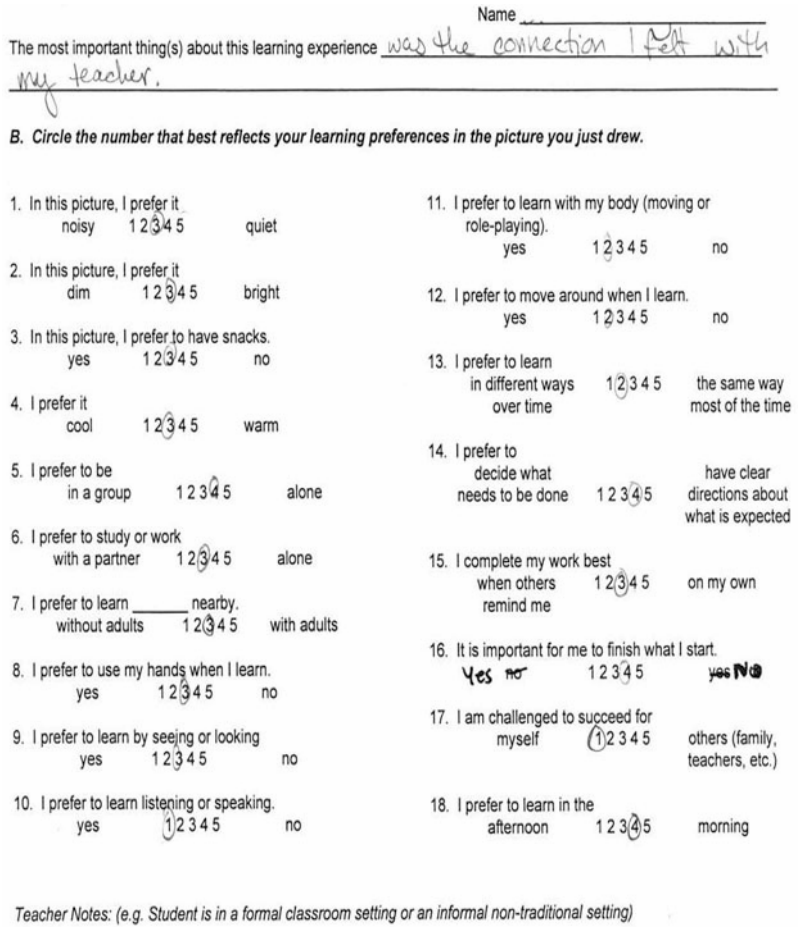
In this picture, I am free as a bird... Mr —— helped me realize all the possibilities before me & helped me feel understood.

The teacher(s) Mr —— was almost completely blind but he maintained good classroom discipline & knew everyone by voice.

My friend(s) Lots of kids learned from Mr —— but many were put off by his differences & resisted his high demands.

Developed by Dorothy Armstrong (armstrod@gvsu.edu) Professor at Grand Valley State University, MI

Figure 3b



Name ___

The most important thing(s) about this learning experience was the connection I felt with my teacher.

B. Circle the number that best reflects your learning preferences in the picture you just drew.

1. In this picture, I prefer it
   noisy 1 2 (3) 4 5 quiet
2. In this picture, I prefer it
   dim 1 2 (3) 4 5 bright
3. In this picture, I prefer to have snacks.
   yes 1 2 (3) 4 5 no
4. I prefer it
   cool 1 2 (3) 4 5 warm
5. I prefer to be
   in a group 1 2 3 (4) 5 alone
6. I prefer to study or work
   with a partner 1 2 (3) 4 5 alone
7. I prefer to learn _____ nearby.
   without adults 1 2 (3) 4 5 with adults
8. I prefer to use my hands when I learn.
   yes 1 2 (3) 4 5 no
9. I prefer to learn by seeing or looking
   yes 1 2 (3) 4 5 no
10. I prefer to learn listening or speaking.
    yes (1) 2 3 4 5 no
11. I prefer to learn with my body (moving or role-playing).
    yes 1 (2) 3 4 5 no
12. I prefer to move around when I learn.
    yes 1 (2) 3 4 5 no
13. I prefer to learn
    in different ways 1 (2) 3 4 5 the same way most of the time
    over time
14. I prefer to
    decide what 1 2 3 (4) 5 have clear directions about what is expected
    needs to be done
15. I complete my work best
    when others 1 2 (3) 4 5 on my own
    remind me
16. It is important for me to finish what I start.
    Yes ~~no~~ 1 2 3 (4) 5 ~~yes~~ No
17. I am challenged to succeed for
    myself (1) 2 3 4 5 others (family, teachers, etc.)
18. I prefer to learn in the
    afternoon 1 2 3 (4) 5 morning

Teacher Notes: (e.g. Student is in a formal classroom setting or an informal non-traditional setting)