

**Development and Validation of the Extended Practicum Learning  
Environment Inventory**

**Joy Kennedy**

**Jeffrey P. Dorman**

**Australian Catholic University**

**TITLE:**

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**ABSTRACT:**

The practicum is regarded as an important component of teacher education programs. There are many variables inherent in the learning environment of the practicum. The study focussed on the learning environment of an extended practicum of a teacher education course at a Catholic university. The paper outlines the development of an instrument designed to explore the perceptions of different members of the extended practicum learning environment. Recognising that there are a number of dimensions to the learning environment of the extended practicum, the perceptions of student teachers, supervising teachers, school principals and other members of school administration teams were collected. Following a trial of an instrument, a 72-item questionnaire was developed with 12 underlying scales (viz, Supervising Teacher Support, Administration Support, Fellow Teacher Support, Fellow Student Teacher Support, Student Teacher Involvement, Peer Cohesion, Task Orientation, Autonomy, Work Pressure, Clarity, Control and Physical Comfort) All items employ a 5-point Likert response format with anchors of 1 (Strongly Agree) and 5 (Strongly Disagree)

**AFFILIATION:** The Australian Catholic University

**ADDRESSES:**

Mrs Joy Kennedy  
School of Education  
McAuley Campus  
Australian Catholic University  
PO Box 247  
Everton Park  
Brisbane 4053.

Dr Jeffrey Dorman  
School of Education  
McAuley Campus  
Australian Catholic University  
PO Box 247  
Everton Park  
Brisbane 4053.

**Background**

The practicum lies at the heart of any teacher education course. There are a number of aspects that determine the successes or challenges of the practicum for student teachers. Understanding the many aspects of the practicum has interested numerous scholars. (Martinez, 1998; Le Cornu, 1999; Pajak, 2001; Zeichner, 1986; Zeichner, Tabachnick & Densmore, 1987; 1992). This paper focusses on the practicum experience of student teachers

at a Catholic university and in particular, the learning environment of students participating in an extended practicum. All students enrolled in the four year Bachelor of Education (primary) course at the Australian Catholic University (McAuley campus) (ACU) complete a six-week extended practicum during their final semester. Students are placed in schools throughout Queensland and northern New South Wales with most students completing the experience in the greater Brisbane area. Students are placed with the same class and supervising teacher for the entire six-week practicum.

The catalyst for studying the learning environment of the extended practicum was evaluation data that the field experience coordinator at McAuley collected from stakeholders of the practicum program. Evaluation of the program came from two key sources: surveys of both supervising teachers and student teachers, and focussed discussion with university tutors and members of school administration teams where students participated in the practicum. Examination of the data revealed a general high level of satisfaction with the program. However, variation in comments appeared to highlight the importance of individual perception in assessing and identifying both the positive and negative aspects of the many components of the program. In particular, the data from the student teachers revealed the importance of perception of relationships and support. In work conducted by Martinez (1998) reporting on student teachers and supervising teachers identifying their perceptions of what makes a good student teacher or a good supervising teacher, the importance of individual perception also appeared to play an important role in the success or otherwise of the student teacher's practicum.

The ACU practicum evaluation also revealed a number of variations in the dimensions of the psychosocial environments of the extended practicum. The results of the evaluation suggested that an investigation of the environment of the extended practicum could improve the experience for students and enhance the positive links that exist with the university's partnership schools. Therefore, understanding the many dimensions of the supervisory environment of the extended practicum became the focus of the intended PhD study of the field experience coordinator who conducted the evaluations of the program.

Entering the complex domain of the supervisory environment created a challenge in terms of developing appropriate research methodology. It was decided that the study would incorporate both qualitative and quantitative research approaches. The research has drawn heavily on the paradigm of learning environment research for the development of an instrument to answer the research questions. The title of the PhD is " A study of learning environment in the extended practicum of a pre-service teacher education course in a Catholic university."

The key questions for the research reported in this paper are:

- What are the dimensions of the school learning environments of the extended practicum of a pre-service teacher education course at a Catholic university?

- Can instruments be developed that assess the environment dimensions identified above?

In order to answer the research questions, the study in progress is designed to proceed through two stages. The first stage is the quantitative stage which involves the development and administration of an instrument designed to gather perceptions of the learning environment from student teachers, supervising teachers, school principals and other members of the administration teams. The second stage will incorporate a qualitative dimension which includes five case studies where data gathered in the first stage will form the basis of semi-structured interviews of student teachers, supervising teachers, school principals and other members of the administration team.

In particular, this paper will outline the processes involved in the development and validation of a survey instrument designed to gather student teacher perceptions of the extended practicum learning environment during the first stage of the research. The instrument is called the Extended Practicum Learning Environment Inventory (EPLI).

### **Learning Environments and Supervision in the Practicum**

The complex nature of the practicum has become the focus of study of a number of teacher educators. (Martinez, 1998; Mayer & Austin, 1999; Schilling, 1998; Shantz & Brown, 1999; Ziechner, 1986, 1992). It seems that a student's experience of practice teaching is affected by a number of aspects of the school environment (Pajak, 2001). Factors including the relationship with the supervising teacher, the psychosocial climate of the school, and teacher beliefs about 'what makes a good teacher' appear to influence student success during the experience. However, each participant's personal perception of the environment appears to affect the outcome of the experience (Kremer-Haydon & Wubbels, 1993).

Key literature informing this study comes from scholarship relating to supervision in the practicum and learning environment research.

#### *Supervision in the Practicum*

Delving into the multi-faceted relationship of the supervisory environment, Martinez (1998) reported on a workshop where student teachers and supervisory teachers discussed their 'ideal other'. Each group created a list of qualities they considered important. An example of student teacher qualities described as important by the supervising teachers included "keen, committed, dependable, willing to go the distance, sound knowledge base, level of initiative". An example of teacher qualities considered important by student teachers included "supportive, warm, friendly, good role model, give professional advice, accept mistakes, not pedantic" (Martinez, 1998 p5).

After examination of these perceptions, participants in the workshops identified three key dilemmas facing the two parties within the learning environment. The first dilemma surrounded the identification of what sort of 'good teaching' is involved and what orientation to teaching is involved? The types of teaching identified as good teaching ranged from invitational /personal, social/ critical orientation, reflective, technical, constructivism or transformative. (Martinez, 1998 p5) This highlights the dilemma of the student teacher in performing in a manner that satisfies the supervising teacher who may reflect any one of the different orientations to teaching. The second dilemma identified related to the student teacher's dilemma of whether to comply or initiate? Martinez (1998, p7) discussed the vulnerability of students in the situation (to become a carbon copy of the teacher or not) and the resulting stress imposed on the student teacher. The third dilemma that emerged related to time constraints. The supervising teachers were torn between how much time to commit to supervision as opposed to how much time should be committed to the children in the class. Student teachers were in a dilemma as to how much time they felt supervising teachers expected them to commit to the practicum and how this caused a personal dilemma in terms of needing to work to survive financially (Martinez, 1998 p9).

These dilemmas emphasise the challenges and complexities underlying the practicum for the key people involved, the teacher and the student teacher. During the practicum, student teachers are confronted by the many beliefs and ways of thinking and acting of the supervising teacher. In order to survive the practicum and satisfy their supervisor, they have to navigate their way through these many varying factors. Managing this process of

navigating the school and classroom culture is an important part of the practicum. As Zeichner (1992) suggests, the student teacher needs to be made aware of the practicum as a site for socialisation into the teaching profession. For this reason, he suggested that it is important for the student to be prepared to adopt a critically, reflective approach to each practicum experience. Le Cornu (1999) goes further to explore the culture of the environment of the practicum. She suggests that the practicum curriculum should be constructed and evolve from within the experience and that the practicum has both intended and unintended outcomes for student teachers. In recognising the many dimensions of the school environment that impact on the student teacher, Le Cornu (1999) recommends that students should be prepared for the many discourses operating within the setting. She suggests also that the culture of the whole school is pivotal to the students' experiences and therefore students should be exposed to a range of contexts for the practicum. A small study conducted by Mayer and Austin (1999) examined the personal, practical theories of supervising teachers who had been identified by student teachers as effective supervisors. The study revealed the importance of a variety of contexts for the practicum experience. An outcome of this study was the call for the provision of a learning environment for the practicum where relationships, communication, professionalism, commitment and a critical approach are important (Mayer & Austin, 1999).

Work on the supervisory environment seems to illuminate the importance of the type of culture existing in the school environment where the student teacher is participating in the practicum (Schilling, 1998; Shantz & Brown, 1999). In particular, the importance of relationships, support, professional organisation and opportunities for personal growth appear to be critical for student teachers. Those involved in observing student teachers in different practicum settings are only too aware that different student teachers' performance levels vary with different teachers. There is a personal dimension that affects the situation. That dimension seems to relate to the perception of the experience of each individual. So the perception of the learning environment of the practicum may be shown to affect performance in the experience (Kremer-Hayon & Wubbels, 1993).

### *Learning Environment Research*

Perception of learning environments has become a focus for extensive study over recent years. (Fraser & Walberg, 1991) Many international studies in learning environment research have demonstrated links between an individual's perception of a learning environment and their performance (Fraser & Walberg, 1991). Whilst working independently of each other, the work of two psychologists, Herbert Walberg (1976, 1979) and Rudolf Moos (19774b) formed the foundation of current learning environment research. Walberg (1976) studied the relationship between perceptions and learning outcomes.

In terms of learning, Walberg (1976) focussed on the notion that psychology is a science of mental life and that a key aspect of mental life is perception. Where traditional psychology objectively counted or measured learning, Walberg suggested that "what is objectively counted and measured should be weighed and justified by what is subjectively perceived insofar as individual learning is concerned" (Walberg, 1976, p156). Therefore, Walberg (1976) postulated that students' perceptions, "as partakers of classroom social transaction; are of great value, and it is easy enough (and incrementally valid) to ask" the students "for them" (p159).

This work heralded the beginning of students being consulted in terms of their perception of learning environments because as Walberg (1976) stated "perception can usually index the complex match of internal and external elements, structures and sequences that optimises learning." Walberg also suggested that "the one way to find out about, say, the suitability of the learning environment is to ask students, as well as teachers and trained observers". (Walberg, 1976 p159) For this reason, seeking the perception of the stakeholders at both

school and classroom levels of educational environments was considered important for this study.

Another key learning environment researcher, Rudolf Moos (1974) was interested in the dimensions of social climates. Moos researched the perceptions of the environment of the members of the environment as well as the well being of the participants. Moos's (1974b) social climate scales were developed for use in hospital wards, juvenile and adult correctional facilities, residential care settings, therapeutic groups, sheltered workshops, work settings, families and classrooms. Moos (1986) designed the instrument, the Work Environment Scale (WES). It contained scales that are also appropriate for examining the dimensions of school environments. The instrument was designed to gather data on the key dimensions of Personal Growth, Relationships and Systems, Maintenance and Change. Data gathered through the use of the instrument was able to shed light on staff involvement, peer cohesion, supervisor support, autonomy, work pressure, clarity, control, innovation and physical comfort (Moos, 1986).

This early work on perceptions of work and learning environments has spawned studies of perceptions of school-level work environments for teachers, which show that teacher perception of psychosocial environments of schools does have an affect on performance (Fisher and Fraser, 1991; Wubbels & Levy, 1993). Also, studies have been conducted on the affects of the learning environment on student teachers which show that perceptions of school- level and classroom -level environments affect student teacher performance (Kremer-Hayon & Wubbels, 1993). In particular, work has been conducted on teacher personality types and related communication styles and how student teachers' perceptions of these affect the practicum experience. Based on the work of Leary (1957) ( cited in Wubbels & Levy, 1993), who focussed on models of communication, Wubbels, Creton, Levy & Hooymayers (1993) developed the Questionnaire in Teacher Interaction, which was used as a basis for examining the supervisory environment of the practicum.

This work was the stimulus for the development of an instrument to identify both the dimensions of a learning environment and student perceptions of the learning environment of an extended practicum at the Australian Catholic University. In particular, it seemed relevant to examine the features of the environment in terms of student perceptions of relationships, personal growth, the organisation and expectations of the practicum. Also collecting data at both school and classroom level seemed pertinent to this study as other scholars have found that the experience for the student teacher is affected by both (Kremer-Hayon & Wubbels, 1993). Therefore, the process of developing an instrument to gather data needed to incorporate these factors.

## Development of Instrument

### *Principles Underlying the Development of the Research Instrument*

Six principles guided the instrument development process. First, the instrument should reflect the literature relating to learning environment research. Accordingly, previously developed instruments for assessing environments were examined. Second, the instrument had to reflect literature relating to supervision in teacher education. Third, the instrument's design should be consistent with general psychometric principles in that it should possess ideally several internally consistent, mutually exclusive scales. Fourth, individual scales should be reflect the different year levels of the school and classroom learning environments that impact on student teachers participating in practicum. Fifth, the instrument should be relatively economical to administer, answer and score. A final consideration was that the instrument should provide coverage of Moos's (1974) three general categories of human environments: relationship, systems maintenance and change, and personal growth. These categories were defined as follows:

- Relationship: How the members of the school community where the student teacher is completing the practicum are involved in the setting, how much they help each other, and how spontaneously they express feelings
- Systems, Maintenance and Change: How orderly and organised the practicum setting for the student teacher is, how clear the expectations are for the student, how much control it maintains, and how responsive it is to change
- Personal Growth: The extent to which the school community encourages or stifles personal of the student teacher.

### *Identification of Dimensions*

To operationalise the above principles, an intuitive-rational approach to scale development was employed (see Hase & Goldberg, 1967). The intuitive-rational approach requires the researchers to undertake three tasks: identify salient dimensions, write tentative scale items, and conduct field testing. Because these tasks are performed by the researcher, the validity of intuitive-rational scales rests heavily on the subjective opinions of the researcher and other experts in the field.

A search of the relevant literature as well as preliminary examination of anecdotal data provided by students in the practicum evaluation process (250 students) were instrumental in identifying the dimensions of the learning environment for the student teachers. Also, discussion with fellow academics involved in the practicum and 5 experienced supervising teachers in schools were instrumental in identifying five key dimensions of the school and classroom environments that are important to beginning teachers, principals and school administrators and student teachers:

- children and student teacher relationships
- teacher and student teacher relationships
- student teacher and school administration team relationships
- student teacher and school support staff relationships
- learning environment and Catholic ethos

### *Review of Existing Instruments for Appropriate Scales and Items*

A review of existing instruments was conducted to select appropriate scales and items. At this point the comments students offered as part of the evaluation program of the practicum were examined. These data revealed the importance of student perceptions of the supervising

teacher's support, friendliness, organisation, clarity of expectations, willingness to offer professional advice, positive encouragement, openness in communication as well as the support of the children and other members of the school staff. These data were compared with the findings of Martinez (1998) and Mayer and Austin's (1999) research on the supervisory environment of student teachers.

While the work on teacher communication of Wubbels, Creton, Levy, and Hooymayers (1993) was useful when considering existing scales and items, the instrument that was found to be most appropriate for the development of the Extended Practicum Learning Environment Inventory was the Work Environment Scale developed by Moos (1986). Scales from this instrument matched many of the aspects revealed in the practicum evaluation data and the aspects highlighted by Martinez (1998) and Mayer and Austin (1999). Accordingly, the WES was used as a basis for the development of the trial form of the Extended Practicum Learning Environment Inventory. Table 1 shows descriptive information for each scale of the WES.

Table 1  
Moos's Work Environment Scale

Scale	Description	Moos's Category
Involvement	The extent to which the student teacher, the other members of the school staff and the pupils are concerned and committed to their jobs/tasks	Relationship
Support	The extent to which the student teacher, other student teachers at the school, the supervising teacher, the other members of the school staff, the pupils support each other	Relationship
Peer Cohesion	The extent to which the relationships amongst the student teacher, the other student teachers at the school, the supervising teacher, the other members of the school staff and the pupils help each other and bond together	Relationship
Clarity	Relates to whether the student teacher knows what is expected and how explicitly rules, policies and expectations are communicated to the student teacher in the school setting	Systems Maintenance and Change
Control	Relates to how much control of the members of the school community is maintained	Systems Maintenance and Change
Physical Comfort	The extent to which the physical surroundings of the school and classroom where the student teacher is completing the practicum are a pleasant environment to work in	Systems Maintenance and Change
Work Pressure	The extent to which the pressure of work dominates the school community where the student teacher is completing the practicum	Systems Maintenance and Change
Task Orientation	The extent to which there is emphasis on good planning, efficiency and getting the job done in the student teacher's practicum school	Personal Growth
Autonomy	The extent to which student teachers are encouraged to be self-sufficient and make decisions	Personal Growth

While the WES provided a good starting point for the development of the present instrument, it was evident that the context of the extended practicum required new scales that would assess the distinctive aspects of the environment of student teachers when in schools. In

particular, the relationship dimensions of the WES did not provide sufficient coverage of the various types of support that student teachers receive. Table 2 shows the 12 dimensions of the tentative instrument that was trialled as part of this instrument development process. A cursory review of Tables 1 and 2 reveals that the Support dimension of the WES has been broken into four support dimensions.

Table 2  
Scales of the Tentative Instrument

Scale Name	Description	Items per Scale	Sample item	Moos's Category
Supervising Teacher Support	The extent to which the supervising teacher supports the student teacher	8	The supervising teacher encourages you when you have difficulties with lessons.	Relationship
Administration Support	The extent to which the administration of the school support the student teacher	12	Members of the administration team create a welcoming environment for student teachers.	Relationship
Fellow Teacher Support	The extent to which the other teachers in the school support the student teacher	8	The other teachers in the school support you.	Relationship
Fellow Student Teacher Support	The extent to which the other student teachers in the school support the student teacher	7	Student teachers at this school give each other constructive criticism.	Relationship
Student Teacher Involvement	The extent to which the student teacher, is concerned and committed to the jobs/tasks	10	You feel willing to be involved as a staff member at this school.	Relationship
Pupil-Pupil Cohesiveness	The extent to which the pupils in the class where the student teacher is placed help each other and bond together	6	The pupils in this class encourage each other.	Relationship
Clarity	Relates to whether the student teacher knows what is expected and how explicitly rules, policies and expectations are communicated to the student teacher in the school setting	9	The supervising teacher communicates clear guidelines for student teachers.	System Maintenance & Change
Control	Relates to how much control of the members of the school community is maintained	9	Supervising teachers keep a close watch on student teachers.	System Maintenance & Change
Physical Comfort	The extent to which the physical surroundings of the school and classroom where the student teacher is completing the practicum are a pleasant environment to work in.	8	The classroom provides an attractive learning setting.	System Maintenance & Change
Work Pressure	The extent to which the pressure of work dominates the school community where the student teacher is completing the practicum	11	There is a lot of work pressure in this school.	
Autonomy	The extent to which the student teacher is encouraged to be self-sufficient and make decisions	9	The teacher allows you to make decisions about lessons.	Personal Growth
Task Orientation	The extent to which there is emphasis on good planning, efficiency and getting the job done in the student teacher's practicum school	10	Task completion is important in this classroom.	Personal Growth

Following identification of the dimensions, sets of items for each scale were established. As indicated in Table 2, a total of 107 items were assigned a priori to the 12 scales. New items were devised to reflect the information gleaned from the literature, the wisdom of university colleagues, school personnel and student practicum evaluation. To improve the face validity of the instrument, these items were checked for item faults and ambiguities.

This instrument was an actual form of a learning environment instrument – it sought to elicit students' perception of the actual environment they encountered. All items employed a 5-point Likert response format with anchors of 1 (Strongly Disagree) and 5 (Strongly Agree). It is noteworthy that six scales referred to relationship dimensions. Clearly, relationships (and in particular support) were considered crucial dimensions to the environments that student teachers experience when in schools.

### **Instrument Validation**

#### *Field Testing*

The preliminary form of the instrument was trialled with a sample of 167 Australian Catholic University students participating in the practicum program at McAuley campus in Semester 1, 2001. Following administration of the trial instrument, data were analysed using the SPSS package.

#### *Internal Consistency Reliability – Preliminary Form of EPLEI*

Estimates of the internal consistency of the 12 preliminary scales were calculated using Cronbach's Coefficient alpha. Overall, reliability coefficients for all scales were found to be sound with the highest Coefficient alpha (.91) for the Supervising Teacher Support scale and the lowest (.66) for the Task Orientation Scale. Table 3 shows these coefficients.

#### *Scale Refinement*

The preliminary instrument had 107 items and it was desirable that this be reduced to a more manageable number of items. Additionally, it was hoped that scale reliability might be improved through the deletion of items that had the weakest item-remainder of scale correlations. Each item was examined in terms of its item- remainder of scale correlation and the scale Coefficient alpha if deleted. Before removing any item, the rationale for its original inclusion and whether rewriting the item might clarify its intent were considered. Regarding proposed changes of items in the scales, consultation occurred with fellow academics knowledgeable of both statistics and the extended practicum in teacher education.

As a result of this exhaustive process, the instrument was refined to 12 scales with 6 items in each scale. Reducing the number of items to 72 made the instrument much more efficient and user friendly.

Table 3

Scale Statistics for EPLEI

Scale Name	Coefficient $\alpha$ for Preliminary Form of Instrument	Scale Statistics for Final Form of Instrument				
		Coefficient $\alpha$	Mean Correlation	Scale Mean	Standard Deviation	Standard Error of Measurement

Supervising Teacher Support	.91	.93	.42	26.10	5.04	1.33
Administration Support	.83	.78	.39	24.19	4.05	1.90
Fellow Teacher Support	.86	.85	.38	23.95	4.37	1.69
Fellow Student Teacher Support	.77	.79	.21	22.59	4.41	2.02
Student Teacher Involvement	.90	.94	.42	26.43	5.19	1.27
Pupil-Pupil Cohesiveness	.81	.82	.26	23.65	4.29	1.82
Clarity	.77	.76	.36	22.21	4.46	2.18
Control	.69	.75	.33	22.13	3.71	1.86
Physical Comfort	.80	.81	.33	23.96	4.30	1.86
Work Pressure	.74	.74	.35	23.98	4.42	2.25
Autonomy	.67	.78	.31	23.12	3.69	1.73
Task Orientation	.68	.69	.04	19.06	4.35	2.42

#### *Internal Consistency Reliability – Final Form of EPLEI*

Table 3 shows that the refinement process resulted in improved internal consistencies for 8 of the 12 scales and only minor reductions for the remaining four scales. Coefficient alphas ranged from .69 to .94. Standard error of measurement data of Table 3 ranged from 1.27 for the Student Teacher Involvement scale to 2.42 for Task Orientation. These data indicate that the ‘true’ scores of any respondent did not vary much from their respective obtained scores. Even for the Task Orientation scale which had the lowest Coefficient alpha (.69), the obtained respondent score can be expected to fall within 4.84 of the ‘true’ score about 95% of the time, assuming a normal distribution of respondent scores.

#### *Discriminant Validity*

One desirable characteristic of an instrument possessing several internally consistent scales is that these scales do not overlap appreciably. Overlap breaches the parsimony goal and confounds interpretation of subsequent findings. One convenient index for such discriminant validity for learning environment instruments is the mean of the correlations of one scale with the remaining scales in the instrument (see Fraser, 1986). Ideally, these mean correlations should have low absolute values. Table 3 shows mean correlations for each of the 12 final scales of the EPLEI. These data indicate that the scales of the final form of the EPLEI do overlap but not to an extent that would violate the EPLEI’s structure. Additionally, the conceptual distinctiveness of each of the scales warrants their retention in the EPLEI.

### **Conclusion**

The next stage of the research will involve the development of the modified forms of the instrument to be used with the supervising teacher, the principal and other members of the administration team. The refined version of the Extended Practicum Learning Environment

Inventory (EPLEI), Actual Form will be administered to appropriate samples in order to answer the research questions identified for the study.

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