

Development of the Japanese Version of
Teaching Style Assessment Scale

(教師のティーチングスタイル測定尺度日本版の開発)

名古屋大学大学院医学系研究科
看護学専攻

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ABSTRACT

Development of the Japanese Version of Teaching Style Assessment Scale

Fumiko Yoshida

Introduction: A crucial issue in Japanese nursing education is practicing Evidence-Based Nursing. The nurse practicing Evidence-Based Nursing acquires learning skills such as critical thinking and self-directed learning. These skills are essential for nursing competencies and require a learning environment in which teachers encourage learners to apply the higher-order cognitive skills of application, analysis, synthesis, and evaluation, and developing these skills requires a learner-centered approach. The Principles of Adult Learning Scale (PALS) has been used extensively for measuring teaching style in relationship to the adult education literature, but no version has been available for use in Japan.

Purpose: The purpose of this research was to develop a Teaching Style Assessment Scale for teachers of nursing in Japan that could be used to identify their teaching style as either student-centered or teacher-centered.

Methodology:

Design: This study utilized a quantitative research design and was methodological research.

Translation procedures: The translation process was accomplished in three steps; the original English items in PALS were translated to Japanese, then back translated from Japanese to English, and finally were compared with PALS. Each step was conducted by a person who was an expert in both Japanese and English. To further check on the validity of the translated items, they were examined by three English experts who are native Japanese and who are at three universities. Other professors, who were not in the nursing field, also examined the translated version of the instrument to see if it could be easily understood by their own faculties. The translated version of PALS was named the Teaching Style Assessment Scale (TSAS).

Pilot test: Before administering TSAS to a large group of nursing educators, it was pilot tested with 10 Japanese nursing educators from five universities, a junior college, and a nursing diploma school. Additional data were collected from seven teachers from outside the field of nursing who were asked for their opinions of the TSAS.

Data Analyzed: In this research, 3 questions were addressed. Data were gathered to answer 3 questions with a translated version of the PALS and were analyzed with the following procedures using SPSS software:

Frequency distribution, One-Sample T-test, Factor Analysis, Cronbach's Alpha, and Correlation.

Ethical Considerations: This research was approved by the Institutional Ethics Review Board at Nagoya University Graduate School of Medicine [approval number 11-162].

Findings:

National Sample: To obtain a national sample of nursing educators, 2,256 questionnaires were sent to nursing teachers at 363 facilities which agreed to participate in this study, and 1,111 questionnaires (49.2%) were returned. In 978 of the 1,111 (88.0%) returned

questionnaires, no items were omitted. Omitted items were assigned a neutral value of 2.5 (Conti, 2004).

Comparing TSAS to PALS: The descriptive statistics was compared between TSAS and PALS. The scores on TSAS were significantly different from the norms for PALS ($t = 84.4$, $df = 1,110$, $p < .001$). The mean for the TSAS was 114.25 with a standard deviation of 12.54, a median of 114, and a mode of 108. The maximum score was 162, and the lowest score was 68. Although these scores were very different from the norms for PALS, the scores for the Japanese sample had a normal distribution.

Factor analysis was used to investigate the theoretical constructs, or factors, that might underlie the structure of the 1,111 responses on the TSAS. For this analysis, the 44 items from the 1,111 responses on the TSAS were factor analyzed using a principal components analysis with a varimax rotation. Because the results were to be compared to PALS, the number of factors for the analysis was set at seven. In the analysis, all 44 items loaded into 7 factors that explained 44.34% of the variance in the analysis. All 44 factor loadings were greater than .30. The 7-factor solution was judged as the best trade-off between the amount of parsimony and comprehensiveness that it provided, and it retained all 44 items of the original PALS. The names of the TSAS factors are very similar to those of PALS except for Factor 4 and Factor 5 of PALS. Thus, many of the items continued to be correlated with each other in TSAS but in smaller clusters, and these clusters then joined other clusters in forming factors. Consequently, while the factors for TSAS and PALS are similar in the concepts that they represent, they are somewhat different in the items that make up these concepts.

Final Form of TSAS: Although the comparison of TSAS and PALS showed many similarities, further analysis was undertaken to reduce the unexplained variation in the sample. Because this process would lead to altering the 44-item structure of PALS, TSAS would be a new instrument. Therefore, the standard instrument construction procedures for establishing validity and reliability were followed for creating the final form of TSAS.

Criterion-related validity: Any external criterion scale was unable to apply to correlated for TSAS. The steps in creating TSAS from PALS and the analysis of the results of TSAS with a national sample of 1,111 establish the concurrent form of criterion-related validity for TSAS by demonstrating that its wording is similar to PALS, that both instruments are measuring similar factors, and that TSAS is moderately reliable in doing this. Thus, the criterion-related validity of TSAS rests in its construction from PALS and in its comparison to PALS.

Content validity: TSAS was translated from PALS; therefore, the content validity of PALS was inferred for TSAS. For each of the 1,111 participants in the national sample, correlations were calculated to examine relationship between the response on each individual item and the individual participant's total score on TSAS. This resulted in 14 items being removed; all of these were negative items. All correlations were significant at the .001 level.

Construct validity: Construct validity was established in two ways. First, since the items for TSAS were translated from PALS, construct validity can be inferred from PALS. Second, factor analysis was used to identify the underlying elements composing teaching style as measured by TSAS. This factor analysis used the responses to the final 30-item form of TSAS and the responses from the 1,111 in the national sample. All 30 items loaded into 5 factors that explained 45.25% of the variance in the analysis. The factor loadings ranged from .749 to .325. The five factors in the final form of TSAS were named as follows: Factor 1- Participation in the Learning Process; Factor 2- Relating to Experience; Factor 3- Climate Building; Factor 4- Learner-Centered Activities; and Factor 5- Personalizing Instruction.

Reliability: Cronbach's alpha was used to establish the internal consistency reliability for the final form of TSAS. This procedure produced an alpha of .86 and a standardized item alpha of .87. These coefficients indicate strong internal consistency reliability for the final form of TSAS and are similar to the high reliability coefficients

found in research with PALS. Test-retest was administrated to 30 educators through convenience and snowball sampling. The correlation coefficient was .9, which is high. It indicates strong stability of TSAS.

Norms for TSAS: As a result of the development and validation process, the Teaching Style Assessment Scale is a 30-item summated rating scale. The mean score on TSAS is 81. This is an average of 2.7 points for each of the 30 items in TSAS ($81/30 = 2.7$), and it is slightly to the learner-centered side of the mid-point of 75 for the total range of the scale which is 0 to 150. The scale has been reversed for TSAS because most of the negative items from PALS have been removed through the validation process.

Discussion:

Data analysis provided some evidence for TSAS as a new instrument. TSAS was derived from PALS and consequently carries with it the long history of validity evidence and reliability evidence of PALS. The criterion-related validity of TSAS rests on its development from PALS and on its comparison to PALS from the national data. Content validity was inferred from the items in PALS and was established for the items in TSAS by examining the correlation between individual item responses and the total scores on TSAS. Construct validity was also inferred from the items in PALS and was confirmed by factor analysis. Internal consistency reliability was established by using Cronbach's alpha. TSAS is similar to PALS but has some important differences. One major difference between TSAS and PALS is that TSAS is about one-third shorter. Like PALS, TSAS is based upon the adult education literature.

Conclusions and Recommendations:

The new 30-item instrument was named the Teaching Style Assessment Scale and is available in both Japanese and English for use either for personal self-assessment or for research purposes. The self-assessment function of TSAS is especially important. Adult education practitioners are encouraged to use TSAS in their daily practice and in their research. Such use can contribute to improved professional practice and to expanding the adult education knowledge base.

要旨

緒言：日本の看護学教育において重要な課題でもある Evidence-based Nursing の実践のためには、クリティカルシンキングや自己主導型学習スキルを身につける必要がある。看護学教育においては、それらのスキルを実践で適用し分析、評価できるようにするためにはメタ認知レベルでの学習ができる環境の提供は必要不可欠となる。そこでの教師のティーチングスタイルは、学習者中心であることがより学習を促進させるといわれている。しかしながら、ティーチングスタイルが学習者中心かどうかを測定できる尺度は、成人教育学をベースに開発された Principles of Adult Learning Scale (PALS)として存在し広く使用されてはいるものの、日本での使用が可能な尺度にはなっていない。

目的：本研究の目的は、日本の看護学教員が、自身のティーチングスタイルが、学習者中心か教師中心かを測定する尺度を開発することである。

方法：

研究デザイン：本研究のデザインは、量的研究と方法論的研究とした。

翻訳手順：原版の翻訳は、3段階を経て実施した。第1段階は、PALS 原版の英語から日本語への翻訳（順翻訳）を2人で行い、第2段階は、順翻訳とは別の2人がそれぞれ日本語訳を英語訳（逆翻訳）にし、第3段階では、第2段階で作成された逆翻訳したものを PALS 原版と比較検討し1つの日本語訳版を完成させた。さらに日本の大学教員で英語を専門分野とする異なる大学の3人によって PALS 原版と日本語訳を比較検討し、全国調査に向けた最終 PALS 翻訳をティーチングスタイル測定尺度と命名した。

予備調査：日本の看護系大学、看護短期大学、看護専門学校に所属する専任教員10人に調査依頼し、TSASを実施、意見を求めた。さらに予備的に看護学領域以外の7分野の大学教員へも意見を求めた。

本調査：本調査は、日本の看護系大学、看護短期大学、看護専門学校それぞれの専任教員を対象として実施した。

分析：この研究のリサーチ・クエスションに基づき、SPSS ソフトを用いて、記述統計量、度数分布、1標本t検定、因子分析、Cronbach α 、相関を求めた。

倫理的配慮：本研究は、名古屋大学大学院医学系研究科生命倫理審査委員会の承認を受けて実施した[承認番号 11-162]。

結果：

本調査：日本の看護系大学、短期大学、専門学校のうち施設代表者へ調査協力への同意があった363施設へ調査票計2,256票を郵送し、そのうち1,111票（49.2%）が回収され、全てが有効回答であった。未記入項目については、中間値「2.5」を割り当てた（Conti, 2004）。

TSAS と PALS の比較 : TSAS のスコアは ($t=84.4$, $df=1,110$, $p < 0.001$) であり、PALS とは
大差があった。TSAS の平均は 114.25(SD12.54)、中央値は 114、最頻値は 108、最大値は 162、
最小値は 68 であった。これらの得点は、PALS とはかなりかけ離れてはいたが、正規分布を
描いていた。

次にこの 1,111 票を使用して、因子構造が PALS と同様であるか否かを確認するために 44
項目を主成分分析した。因子解は、PALS と比較であるので PALS の因子数である 7 を投入し
た。その結果、44 項目全てが、7 因子に組み込まれ、分散 44.34% で説明できた。全項目の因
子負荷量は、0.30 以上であった。7 因子解以外についても検討・実施してみたが分散の説明が
低く、7 因子解が最も望ましいと考えられた。すなわち TSAS の因子名は、PALS の因子のう
ち、因子 4 と因子 5 を除き、PALS と非常に類似しており、最終結果としては、TSAS と PALS
の因子は概念上の類似はあるものの、概念を構成する項目では相違が見られた。

TSAS の最終形 : TSAS は PALS との比較から類似していることがわかったが、なお説明でき
ないノイズを低減するため、さらに分析を進めたところ、TSAS は、PALS の 44 項目の構造
を変える新しい尺度となった。そのため、この新しい尺度である TSAS の妥当性と信頼性の検
証を行うこととした。

基準関連妥当性 : 基準関連妥当性は他の基準との関連によって決定される。本研究に適用で
きる外的基準となる尺度がなく使用不可能であった。そこで、TSAS は新尺度ではあるが PALS
から作られていること、そして 1,111 票を使用した本調査から PALS と類似因子を確認でき
ているため、PALS との比較結果からみて基準関連妥当性の確保に至った。

内容的妥当性 : 内容的妥当性はテストが意図された内容領域を測定しているか否かにより決
定される。TSAS は PALS の翻訳手順を経て作られているため PALS がもつ内容的妥当性から
TSAS についてもそれを推定することができる。さらに内容的妥当性の説明に向けて、TSAS
の各項目と TSAS 合計スコアの相関を確認したところ、44 項目のうちのネガティブ項目であ
った 14 項目が削除されまた、全ての相関は、0.001 水準で有意であった。

構成概念妥当性 : 構成概念妥当性はこのテストは何を測定しているのかという根本的妥当性
を問うことで決定され、妥当性の中でも最も重要である。TSAS はこの妥当性を以下 2 つの方
法で説明できる。1 つは、TSAS が PALS から翻訳されており、内容的妥当性と同様に、PALS
がもつ構成概念妥当性から推測できるということ。もう 1 つは、TSAS の最終形である 30 項
目の因子分析において、45.25% の分散を説明する 5 因子がみられたこと、それらの因子負荷
量が 0.745 から 0.325 の範囲であったこと、かつその因子名は PALS 内の因子名から命名され
たことから因子が PALS と類似していること、以上から構成概念妥当性は説明できる。因子名
は、因子 1 : 学習プロセスへの参加、因子 2 : 経験に関連づける、因子 3 : 雰囲気づくり、因
子 4 : 学習者中心の活動、因子 5 : 個人指導であった。

信頼性 : TSAS の最終形 30 項目の内的整合性の指標として、クロンバックの α 係数は 0.86
(標準化された項目 α は、0.87) であった。これにより TSAS の内的整合性の信頼性が確認さ
れた。また、再テストを 30 人の看護学教員 (大学、短期大学、専門学校) に実施し、1 回目

と 2 回目の総得点の相関係数は 0.9 であり、TSAS が安定性を確保していることが示された。なお 1 回目と 2 回目の調査間隔は 2 週間とした。

TSAS の規準：妥当性の検証プロセスの結果、TSAS は 30 項目の合計得点でティーチングスタイルを判定できる尺度となった。TSAS の平均は 81 であり、TSAS 内の 30 項目のそれぞれの平均は 2.7 ($81/30=2.7$) となる。この尺度の範囲は、0 から 150 であり、中点の 75 から上が学習者中心のティーチングスタイルであることを示す。また TSAS のネガティブな項目の殆どがこれまでの分析過程で除去されたため、TSAS では回答肢の極 (0 と 5) を転置させ計算がしやすいようにした。

考察：新しい妥当性と信頼性のある TSAS であることをデータ解析によって示すことができた。TSAS は、PALS に由来し、それゆえに PALS が持つ妥当性と信頼性の長い歴史をも備えている。基準関連妥当性は、PALS からの開発であることに加え PALS との比較によって確認されまた、内容的妥当性は、PALS 項目から推測され、個々の項目と回答と TSAS の総得点との相関を確認することで得られた。構成概念妥当性は PALS の項目から推測され、因子分析によって確認された。最後に、信頼性は、内的整合性の指標であるクロンバックの α から確認できた。TSAS と PALS はともに、成人教育理論に基づいた尺度であっても、いくつかの重要な違いがある。大きな違いの 1 つは、PALS に比べ TSAS では、項目が 3 分の 1 だけ短い尺度になったことで、尺度の効率を向上させるに至った点である。

結論ならびに提言：30 項目として新しくなったティーチングスタイル測定尺度は、TSAS と命名され、日本語と英語のそれぞれで、個々の教師が自己診断用としてまた研究目的用として、利用可能になっている。TSAS にとって、この自己診断機能は大変重要である。看護学教師のみならず、広く教師が日々の実践と研究に TSAS を用い、活用されることを推奨する。この尺度の活用が、教師の発達したプロフェッショナルな実践 (FD) や成人教育に関する知識の獲得ならびにそれをふまえた学習者へのアプローチの改善行動に貢献すると思われる。

ACKNOWLEDGEMENTS

Learning is giving meaning to your experiences.

• • • Myles Horton

I can't count how many times I recalled this message during this research. I also remembered all my learning experiences in Japan, in the United States (New York), and in Africa (Uganda). Now, I can finally put all my learning experience together and give it meaning.

This journey was made possible by many people. Among the first and most important is Dr. Gary J. Conti, EdD, Adult Education Department, Oklahoma State University. Dr. Conti developed The Principles of Adult Learning Scale, and readily agreed to my initial request to share PALS. He taught me that "research should have rigor (in order to) create new knowledge." He acted as my mentor, offering me his invaluable advice throughout each step of my research, and gave me his full support in the development of a new instrument, entitled Teaching Style Assessment Scale (TSAS), for both Japanese and English.

I am grateful to Linda Conti for her wisdom, her encouragement! Her good cheer and the beautiful pictures she sent me when I struggled to "see the light." Thanks to my New York sisters, Sharon Spiegel and Elizabeth Grubbs, bilingual Mariko Ueda, and Marie Goto, Dr. Yamauchi's secretary, whose support helped me so much. I would like to thank those educators who participated in this research through the Pilot and the National Testing.

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Finally, without the unconditional love and support of my husband, Takaaki Iwasaki, this work could not have been accomplished.

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CHAPTER 1

INTRODUCTION

Background

A crucial issue of Japanese nursing education is practicing Evidence-Based Nursing (Ministry of Health, Labor and Welfare, 2008). The amount of research on Evidence-Based Nursing has been increasing since the need for Evidence-Based Nursing was reported (Asakawa, 2011). The nurse practicing Evidence-Based Nursing acquires learning skills such as critical thinking and self-directed learning. These skills are essential for nursing competencies and require a learning environment in which teachers encourage learners to apply the higher-order cognitive skills of application, analysis, synthesis, and evaluation in Bloom's taxonomy of cognitive behaviors (Heimlich & Norland, 1994, p. 74).

Critical thinking is essential for Evidence-Based Nursing practice, and developing these skills requires a learner-centered approach (Chipas, 1995; Schaeffer & Zygmunt, 2003). The National Leagues for Nursing in the USA proposed the necessity for learner-centered approaches to learning. This position is congruent with the long history of adult learning theory in the United States. Indeed, Merriam (2001) has argued that the learner-centered concepts of andragogy and self-directed learning form the twin pillars of adult learning theory (p. 3).

In his original description of andragogy, Knolwes (1970) pointed out that "the

behavior of the teacher probably influences the character of the learning climate more than any other single factor” (p. 41). Moreover, research has shown that “teaching does make a difference....Teaching is the human connection between the content and the environment and the learners” (Heimlich & Norland, 1994, p. 109). There are two basic approaches for the teacher making this human connection with the learners. These are the teacher-centered approach and the learner-centered approach (Conti, 2004, pp. 77-78). With the teacher-centered approach, “the teacher’s role is to design an environment which stimulates the desired behavior and discourages those that have been determined to be undesirable” (p. 77). While the teacher-centered approach focuses upon the actions of the teacher in planning and controlling the learning environment, the learner-centered approach is concerned with the personal development of each individual learner, and the focus therefore is upon the individual learner (p. 78). “Although a teacher-centered approach is widely practiced in adult education, the learner-centered approach is strongly supported in the field’s literature” (p. 78).

Because variation is possible in teaching, it is important to assess and report teachers’ teaching style (Stanlet, 2010). “Teaching style refers to the distinct qualities displayed by a teacher that are persistent from situation to situation regardless of the content” (Conti, 2004, pp. 76-77). Teaching style is much broader than the specific teaching strategies and methods that are employed to accomplish a specific instructional objective (Conti, 2004, p. 77; Conti, 1989, p. 4). Methods are the collection of tools that teachers have available to them to use in their instruction (Heimlich & Norland, 1994, p. 158) while teaching style “is directly linked to the teacher’s educational philosophy” (Conti, 2004, p. 77). Teachers enter the teaching-learning transaction with a definite set

of values (Brookfield, 1986), and these in turn influence the teacher's beliefs about the nature of the learner, the purpose of the curriculum, and the role of the teacher in the classroom (Darkenwald & Merriam, 1982). An awareness of one's teaching style is important in order for teachers "to examine their beliefs about teaching and current teaching behavior in depth" (Heimlich & Norland, 1994, p. xi) in order for them to reflect critically upon their professional practice (Conti, 2004, pp. 75-76; Heimlich & Norland, 1994, pp. 14-15). Thus, "a knowledge of teaching style can make a difference in how teachers organize their classroom, how they deal with learners, and how well their students do in learning" (Conti, 1989, p. 3).

The Principles of Adult Learning Scale (PALS) has been used extensively in the field of adult education for measuring teaching style (for example, see Brookfield, 1986, pp. 34-36; Heimlich & Norland, 1994, p. 65; Merriam & Bierema, 2013, pp. 59-60). Since it was developed in 1978, PALS has been used in over 100 research studies and in countless training activities. PALS is a 44-item, summated rating scale that:

Measures the frequency with which one practices teaching/learning principles that are described in the adult education literature. High scores on PALS indicate support for a learner-centered approach to teaching. Low scores reveal support for a teacher-centered approach. Scores in the middle range disclose an eclectic approach that draws on behaviors from each extreme. (Conti, 2004, p. 79)

While PALS has been available for measuring teaching style in English-speaking countries, there has been no scale with which to measure a teacher's teaching style in Japan. Therefore, it was necessary to develop a Japanese version of a teaching style

instrument. Because PALS is based on the long-established theory base for adult learning theory, PALS was used as the foundation for this new instrument.

Purpose

The purpose of this research was to develop a Teaching Style Assessment Scale for teachers of nursing in Japan that could be used to identify their teaching style as either student-centered or teacher-centered.

Research Questions

Research question identify the key variables (independent and dependent) in a quantitative study. Therefore the questions must address simplicity and directness (Polit & Hungler, p. 61).

In this research, the following questions were addressed:

1. What is the teaching style profile of nursing educators on the Principles of Adult Learning Scale when it is translated into Japanese?
2. How does the pattern of responses for nursing educators on the translated version of the Principles of Adult Learning Scale compare to the factor structure for North American responses?
3. What is the most efficient form of an instrument for nursing educators for the items in the Principles of Adult Learning scale?

Data were gathered to answer these research questions with a translated version of the Principles of Adult Learning Scale and were analyzed with the following procedures:

Question	Data Source	Procedure
1. What is the teaching style profile of nursing educators on the Principles of Adult Learning Scale when it is translated into Japanese?	Translated PALS (TSAS)	Frequency Distribution
2. How does the pattern of responses for nursing educators on the translated version of the Principles of Adult Learning Scale compare to the factor structure for North American responses?	TSAS	One-Sample T-test, Factor Analysis, Cronbach's Alpha
3. What is the most efficient form of an instrument for nursing educators for the items in the Principles of Adult Learning scale?	TSAS	Correlation, Factor Analysis, Cronbach's Alpha, Frequency Distribution

CHAPTER 2

REVIEW OF THE LITERATURE

Approaches to Teaching-Learning

Over time there have been several approaches to the teaching-learning transaction. The traditional approach to the teaching-learning process was content-centered (Lindeman, 1926/1996, p. 95). Knowledge was considered like a gorge of another person's experience, and then it was separated by each subject and give to pupils (p. 95). The originally idea of education on the concept was The Sophists were early proponents of teaching for excellence in the aristocracy, but this approach was criticized by teachers and philosophers like Socrates, Plato, and Aristotle who favored questioning and dialogue as a means for logical thinking (Watanabe, 2002). This approach sought a flourishing humanity with learning focused on religion and knowledge.

Historically, the meaning of education was pedagogy, which is "a word with Greek roots meaning 'leader of the child,' which places the learner in a decidedly dependent mode" (Jacobs, &Hundley, 2010, p.19; Knowles, 1975, p. 19). In other words, learners only learn what the teacher teaches; the learners are externally motivated. This is "extrinsic motivation" (Miyamoto & Nasu, 1995, p.139), which means that people learn and accomplish based on rewards (Murray, 1964; Yagi, 1966). Activity and reward are not tied to one another. According to Thorndike (Knowles, 1998, p.76), teaching is the control of learning by the management of rewards. Education was simply focused on the

presentation of the content. Intrinsic motivation was not a necessary concern or condition of any teaching approach.

John Dewey shifted the emphasis in education from the content to the learner. Dewey originally clarified the characteristics of human learning, and he focused on problem solving using the individual's experiences. His presentation of education according to human life does not allow for the division of knowledge into skill and thought. There is an educational effect (Tomita, 2014). Dewey's ideas challenged conventional thought and gave birth to a new way of thinking about learning. This is the root of the teacher-centered vs learner-centered debate. Those, like Skinner, who favor operant conditioning as a method of learning, say that society is the focus of education and therefore favor the teacher-centered approach. Those, like Carl Rogers, who favor the humanistic approach (e.g., person-centered approach) believe that the individual is the focus of education and therefore favor the learner-centered approach (G. J. Conti, personal communication, March 31, 2014).

Carl Rogers presented the concept of "humanistic education" in his book *Freedom to Learn*. He stated that purpose of education is facilitating learning for learners. Learner-centered approach is helping the educational purpose (Hatase & Murata, 2006; Rogers & Freiberg, 1994).

Adult Learning

While Dewey focused on the public schools, other educators focused on adult learners in real-life situations. One adult educator, Myles Horton, believed that learning is related to experience and said that "you can't learn unless you have a reason for learning and want to learn" (Jacobs, 2003). Adults learn when they are trying to get answer or

solution for the issues.

Adult education is different from Adult learning. However, difference between these concepts has not been recognized clearly in Japan (Watanabe, 2002).

In The Meaning of Adult Education, Eduard Lindeman (1926/1996) presented the concept of “education is life” (p. 118). “Lindeman interpreted and applied Dewey’s ideas for active learners to adult education...the approach to adult education will be via the route of situations, not subjects” (Conti, 1978.). Lindeman and Dewey were contemporaries at Columbia University, and although Lindeman was concerned with adult education, he was influenced by Dewey’s ideas about schools and children. Lindeman accepted and applied Dewey’s concept of learning as a fundamental component of adult education (Lindeman, 1926/1996, p. 7). Education is not merely preparation for the future; “life is learning”. The best resource in adult education is the experience of the learner (p. 31).

Originally, Lindeman used the term “Andragogik” in his book Workers’ Education. This term meant that adult education is the process of linking theoretical knowledge and practical knowledge (Lindeman, 1926/1996, p. 117). After Lindeman, Malcolm Knowles offered the term “andragogy” as more appropriate than “pedagogy” for the adult learning process (Conti, 1978). Pedagogy “means, specifically, the art and science of teaching children” (Knowles, 1970, p. 37). The term of andragogy is based on combining the Greek words for leader (agogus) and man (aner), and it is defined as the art and science of helping adults learn (Knowles, 1975, p.19). Andragogy is based on four original assumptions. These are that as a person matures they (1) have an independent self-concept and who can direct their own learning, (2) have accumulated a reservoir of

life experiences that is a rich resource for learning, (3) have learning needs closely related to changing social roles, and (4) are problem centered and interested in immediate application of knowledge (Knowles, 1970, p. 39). Knowles later added two more assumptions: Adults are motivated to learn by internal rather than external factors, and adults have a need to know why they need to learn something before undertaking the learning task (Knowles et al., 2005, pp. 64-68). Using his original assumptions, Knowles proposed a learner-centered program planning model for designing, implementing, and evaluating educational activities (Knowles, 1970, p. 54). “These foundational theories of andragogy and self-directed learning describe adult learning as a learner-centered activity. This focus mandates that individual differences be identified in the classroom in order for teachers to be effective” (McClellan & Conti, 2008, p. 14).

Teaching Style

Heimlich and Norland state that “teaching style is illustrated in every aspect of instruction. The instructor’s thoughts, feelings, approach, and actions are indicative of teachers’ teaching style” (Byrd, 2010, pp. 90-91). Teaching style is very different from teaching methods (Conti, 1989, p. 4). Teaching style links teachers’ educational philosophy and their action in the classroom (Conti, 2007), and it “refers to a comprehensive and consistent set of beliefs about the teaching-learning transaction” (p. 20). “Teaching style refers to the distinct qualities displayed by a teacher that are persistent from situation to situation regardless of the content...Because teaching style is comprehensive and is an overt implementation of the teacher’s beliefs about teaching, it is directly linked to the teacher’s educational philosophy” (Conti, 2004, pp. 76-77).

The Principles of Adult Learning Scale (PALS) was developed to measure the relationship of teaching style to the adult education literature. PALS is a 44-item summated rating scale that “measures the frequency with which one practices teaching/learning principles that are described in the adult education literature” (Conti, 2004, p.79). PALS has been used in approximately 100 dissertations and for a plethora of internationally published research focusing on the impact of teaching style on learner achievement (Byrd, 2010). While the results of some research indicated that the learner-centered approach was generally more effective, it was the consistency of the teaching style that provided the most positive impact on learner achievement (Conti, 2004, pp.84-85).

The Principles of Adult Learning Scale (PALS)

The 44 items from the valid and reliable Principles of Adult Learning Scale (Conti, 1982, 2004) were used for this study. These items measure how practitioners relate to the adult education theory base. PALS can be completed in about 10-15 minutes. The items relate to things that a teacher of adults might do in a classroom, and respondents indicate how frequently they practice the action described in each item (Conti, 2004, p. 79). Responses are on a 6-point Likert-type scale: 0–Always, 1–Almost Always, 2–Often, 3–Seldom, 4–Almost Never, and 5–Never. Scores are calculated by summing the value of the responses to all items. Scores may range from 0 to 220. The mean for PALS is 146 with a standard deviation of 20. Scores above 146 indicate a tendency toward the learner-centered mode while lower scores imply support of the teacher-centered approach.

In addition to a total score to indicate overall teaching style, PALS produces seven factor scores by summing the items in each factor. The seven factors in PALS are

(a) Learner-Centered Activities, (b) Personalizing Instruction, (c) Relating to Experience, (d) Assessing Student Needs, (e) Climate Building, (f) Participation in the Learning Process, and (g) Flexibility for Personal Development (Conti, 2004, pp. 79-82). High scores indicate support of the learner-centered concept that represents the factor name while low scores indicate support of the opposite concept in the factor. Factor scores are calculated by adding up the points for each item in the factor.

PALS is a valid and reliable instrument (Conti, 1982). The construct validity of the items for PALS was established by the testimony of a local and a national jury of adult educators. The content validity of PALS was established by collecting field-test data with adult basic education practitioners and then by calculating Pearson correlations to determine the relationship between each individual item and the total score from each participant. Criterion-related validity was established by comparing the scores on PALS to scores on the Flanders Interaction Categories. Reliability was established for PALS by the test-retest method with a group of adult basic education practitioners which produced a reliability coefficient of .92.

CHAPTER 3

METHODOLOGY

Design

This study utilized a quantitative research design and is methodological research. Quantitative research is “the investigation of phenomena that lend themselves to precise measurement and quantification often involving rigorous and controlled design”(Polot & Hungler, 1999, p. 712). Methodological research studies “address the development, validation, and evaluation of research tools or techniques” (p. 208), and “the problems of cross-cultural quantitative research with the concept of meaning equivalence” (Michalos, 2008, p. 266). In the step of translation, some words were modified for Japanese to make more understandable in Japanese after consulting with Dr. Conti who developed of PALS.

The development of an instrument involves determining items for the instrument and then collecting validity and reliability data for these items (Gay, Mills, & Airasian, 2009, p. 166). The Principles of Adult Learning Scale was used as the source of items for the Teaching Style Assessment Scale (TSAS). The validity and reliability of these items was inferred from extensive history and research record associated with PALS and with its use in numerous diverse setting. However, because of the cultural diversity between Japan and the Western countries in which PALS was developed and used, it was necessary to gather data on these items with a sample in Japan. This data were first compared to the norms for PALS, and then a confirmatory factor analysis was conducted

to compare the structure of the Japanese responses to the established factors for PALS. Finally, Cronbach's alpha reliability was calculated to measure the internal consistency of the new TSAS.

Translations Procedures

The first task for making the Teaching Style Assessment Scale was to translate the items in PALS from English to Japanese. This translation was accomplished in three steps (Brislin, 1970). Step 1 was to translate the original English items in PALS to Japanese. This was accomplished cooperatively primarily by a Japanese researcher with a Master's of Arts in Nursing from the United States together with a person who is bilingual in Japanese and English. Step 2 was to back translate this Japanese translation to English in order to check its accuracy. This translation was conducted independently by a second Japanese researcher with a doctorate in nursing from the United States and by a Japanese English teacher. Whenever any differences occurred between the two Step 2 translations, the process was repeated until the meaning of the back translation matched the original PALS items precisely. Step 3 was to combine the two individual translations from Step 2 into one scale. This was done by a native English-speaking Teacher of English to Speakers of Other Languages (TESOL) who has a Master's of Arts in TESOL and Master's of Science in Nursing.

To further check on the content validity of the translated items, they were examined by three English experts who are native Japanese and who at three universities. Other professors, who were not in the nursing field, also examined the translated version of the instrument to see if it could be easily understood at their own faculties.

Pilot Test

The translated version of PALS was named the Teaching Style Assessment Scale (TSAS). Before administering TSAS to a large group of nursing educators, it was pilot tested (Gay, Mills, & Airasian, 2009, p. 166) with 10 Japanese nursing educators from five universities (7), a junior college (1), and a nursing diploma school (2). Additional data were collected from seven teachers from outside the field of nursing who were asked for their opinions of the TSAS. Thus, with the assistance of language experts and local pilot testing, a translated version of PALS was developed that could be used for further testing in Japan.

Collected Data and Analyzed

Data were collected from Japanese nursing educators; nursing diploma schools, nursing junior colleges, and nursing universities. Sent 2,256 questionnaires to 363 facilities representatives who had and answer of informed consent in this study from May,2012 to July, 2012. After answer to a questionnaire, sent it back with a sealed letter enclosed individually.

In this research, 3 questions were addressed. Data were gathered to answer 3 of research questions with a translated version of the PALS and were analyzed with the following procedures using SPSS software; Frequency distribution, One-Sample T-test, Factor Analysis, Cronbach's Alpha, & Correlation.

Ethical Considerations

This research was approved by the Institutional Ethics Review Board at Nagoya University Graduate School of Medicine [approval number 11-162] in Japan.

CHAPTER 4

FINDINGS

National Sample

After PALS was translated to form TSAS and this Japanese translation was pilot tested locally, data were gathered from a national sample to compare the TSAS to PALS. To obtain a national sample of nursing educators, 2,256 questionnaires were sent to nursing teachers at 363 facilities from May to July, 2012. From these, 1,111 questionnaires were returned for a 49.2% response rate. Out of 1,111 responses, 679 (61.1%) were from nursing diploma schools, 46 (4.1%) were from junior colleges, and 386 (34.8%) were from the university. This ratio of returns is similar to the ratio of institutions offering nursing courses in Japan.

In 978 of the 1,111 (88.0%) returned questionnaires, no items were omitted. Omitted items were assigned a neutral value of 2.5 (Conti, 2004). The numbers of missing items and their percentages are as follows: 100 (9.0%) responded with 1 missing item, 17 (1.5%) returned with 2 missing items, five (0.4%) left three items, 3 (0.3%) responded with 5 and 4 missing items respectively, and there was 1 (0.1%) respondent each for the questionnaire with 6, 7, 9, 10, and 13 missing items. The scale consists of 6 points (0, 1, 2, 3, 4, 5); it does not have a mid-point. That is, a person cannot be neutral on any item. They have to make a choice on one side of the scale; therefore, their response pushes them in one direction or the other. If no value or a zero is given for a missing item, then this will skew the person's score in one direction. If the item is omitted, then the person's total score will be based on fewer items than everyone else. To avoid these

problems, a value of 2.5 has been assigned. This does not push the person's score in either direction; therefore, it is truly neutral.

Comparing TSAS to PALS

The data from this national sample were used to construct a profile of the nursing educators to answer the first research question for this study and to compare the nursing educators to the North American norms in order to answer the second research question for this study. The scores on TSAS were significantly different from the norms for PALS ($t = 84.4$, $df = 1,110$, $p < .001$). The mean for the TSAS was 114.25 with a standard deviation of 12.54, a median of 114, and a mode of 108. The maximum score was 162, and the lowest score was 68. Although these scores were very different from the norms for PALS, the scores for the Japanese sample had a normal distribution. Yet, 99.4% of the sample or all but 7 of the 1,111 respondents scored below 146, which is the mean for PALS. This outcome indicates that those in the Japanese sample are engaging in extremely teacher-centered practice in nursing education and that their practices are not congruent with the mainstream adult education literature.

The total score on PALS can be broken down into seven factor scores. The mean scores for the national sample for every factor were significantly lower on the TSAS than the norms for the factors on PALS (see Table 1). For Factor 1--Learner-Centered Activities and Factor 2--Personalizing Instruction those differences were large, and these differences were approximately one-third of the value of the normed factor mean. For Factor 5--Climate Building the difference was 25% of the value of the normed factor mean. For Factor 6--Participation in the Learning Process and Factor 7--Flexibility for Personal Development the difference was 15.4% of the value of the normed factor mean. While the differences between the normed factor mean and the TSAS responses seem to

be small for Factor 3--Relating to Experience and Factor 4--Assessing Student Needs, the one-sample t-test reveals that the TSAS group also differs significantly from the normed group for PALS on these factors. Thus, the lower mean scores indicate that the national sample was significantly more teacher-centered on every factor than the norms for PALS.

Table 1: Comparison of Factor Score for PALS and TSAS

Factor	PALS		TSAS		t-test		
	Mean	SD	Mean	SD	<i>t</i>	<i>Df</i>	<i>p</i>
1. Learner-Centered Activities	38	8.3	26	5.3	75.1	1,110	<.001
2. Personalizing Instruction	31	6.8	20	4.8	75.9	1,110	<.001
3. Relating to Experience	21	4.9	21	3.9	2.6	1,110	0.011
4. Assessing Student Needs	14	3.6	13	2.7	12.5	1,110	<.001
5. Climate Building	16	3	12	2.6	46.5	1,110	<.001
6. Part. in Learning Process	13	3.5	11	3.1	22.8	1,110	<.001
7. Flexibility for Personal Devel	13	3.9	11	2.8	23.5	1,110	<.001

Factor Analysis

Factor analysis was used to investigate the theoretical constructs, or factors, that might underlie the structure of the 1,111 responses on the TSAS. Factor analysis is a powerful multivariate statistical procedure that is used to remove the redundancy from a set of correlated variables by placing the variables in a smaller set of derived factors (Kachigan, 1991, p. 237). In factor analysis, correlations are calculated among all of the variables in the analysis, and variables that are highly correlated among each other but correlated lowly with other variables are grouped as derived factors (Gay, Mills, & Airasian, 2009, p. 204). This subset of variables that make up the factor can be thought of as the abstract underlying dimension (Kachigan, 1991, p. 237) or a concept contained in the instrument.

PALS contains seven factors (Conti, 2004). The scores on these factors are used

both in practitioner training and in research to break down the overall total score on PALS and to give more detailed description to the general teaching style score.

The factor analysis on the TSAS was conducted to determine if it had the same underlying factor structure as PALS. For this analysis, the 44 items from the 1,111 responses on the TSAS were factor analyzed using a principal components analysis with a varimax rotation. Because the results were to be compared to PALS, the number of factors for the analysis was set at seven. In the analysis, all 44 items loaded into 7 factors that explained 44.34% of the variance in the analysis. The degree to which each variable correlates with a factor is referred to as the factor loading (Kachigan, 1991, p. 243). With a large sample such as this one, any variable that has a factor loading of .30 or greater is considered statistically significant (Sheskin, 2007, p. 1627). All 44 factor loadings were greater than .30, and were distributed as follows: .70 to .79–5, .60 to .69–13, .50 to .59–10, .40 to .49–12, and .30 to .39–4 (see Table 2).

Table 2: Factor Loadings and Factor Names for 7-Factor Solution for TSAS

Load	Item	Description
Factor 1: Individualization		
0.75	24	I let each student work at his/her own rate regardless of the amount of time it takes him/her to learn a new concept.
0.74	32	I gear my instructional objectives to match the individual abilities and needs of the students.
0.73	25	I help my students develop short-range as well as long-range objectives.
0.71	23	I have individual conferences to help students identify their educational needs.
-0.70	11	I determine the educational objectives for each of my students.
0.66	35	I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.
0.61	36	I have my students identify their own problems that need to be solved.
0.51	15	I allow students to participate in making decisions about the topics that will be covered in class.
0.47	1	I allow students to participate in developing the criteria for evaluating their performance in class.
-0.44	21	I use what history has proven that adults need to learn as my chief criteria

		for planning learning episodes.
Factor 2: Learner-Centered Actions by the Teacher		
0.59	14	I plan learning episodes to take into account my students' prior experiences.
0.56	22	I accept errors as a natural part of the learning process.
0.55	20	I utilize the many competencies that most adults already possess to achieve educational objectives.
0.51	18	I encourage dialogue among my students.
0.51	10	I arrange the classroom so that it is easy for students to interact.
0.50	8	I participate in the informal counseling of students.
-0.50	12	I plan units which differ as widely as possible from my students' socio-economic backgrounds.
0.48	5	I help students diagnose the gaps between their goals and their present level of performance.
-0.45	13	I get a student to motivate himself/herself by confronting him/her in the presence of classmates during group discussions.
0.45	43	I help students relate new learning to their prior experiences.
0.42	31	I plan activities that will encourage each student's growth from dependence on others to greater independence.
0.36	17	I use different techniques depending on the students being taught.
-0.30	37	I give all students in my class the same assignment on a given topic.
Factor 3: Teacher-Centered Activities		
0.68	9	I use lecturing as the best method for presenting my subject material to adult students.
0.62	6	I provide knowledge rather than serve as a resource person.
0.61	16	I use one basic teaching method because I have found that most adults have a similar style of learning.
0.45	7	I stick to the instructional objectives that I write at the beginning of a program.
0.41	19	I use written tests to assess the degree of academic growth in learning rather than to indicate new directions for learning.
Factor 4: Classroom Control by Teacher		
0.67	26	I maintain a well-disciplined classroom to reduce interferences to learning.
0.63	29	I use methods that foster quiet, productive, deskwork.
0.60	2	I use disciplinary action when it is needed.
0.39	4	I encourage students to adopt middle-class values.
0.35	30	I use tests as my chief method of evaluating students.
Factor 5: Relating to Experience		
0.66	44	I teach units about problems of everyday living.
0.61	34	I encourage my students to ask questions about the nature of their society.
0.50	39	I organize adult learning episodes according to the problems that my students encounter in everyday life.

Factor 6: Personalizing Instruction		
0.65	27	I avoid discussion of controversial subjects that involve value judgments.
0.59	33	I avoid issues that relate to the student's concept of himself/herself.
-0.48	28	I allow my students to take periodic breaks during the class.
-0.41	3	I allow older students more time to complete assignments when they need it.
0.40	38	I use materials that were originally designed for students in elementary and secondary schools.
Factor 7: External Standards		
0.64	40	I measure a student's long-term educational growth by comparing his/her total achievement in class to his/her expected performance as measured by national norms from standardized tests.
0.63	41	I encourage competition among my students.
-0.48	42	I use different materials with different students.

The difficult task of factor analysis is to decide how many factors best represent the data (Kachigan, 1991, p. 246). In order to explore if a better structure existed than the 7-factor solution, additional factor analyses were run with the number of factors fixed at 6, 5, 4, 3, and 2. While all 44 items loaded on factors in the 6-factor solution, the following number of items did not load at the .30 level on any factor in the analyses: 5 factors–1 item, 4 factors–1 items, 3 factors–2 items, and 2 factors–7 items. Since the goal of this research was to develop an instrument based on the 44 items of PALS, all of the solutions except the 6-factor solution were rejected as unsuitable because they reduced the number of items. When the 6-factor solution was compared to the 7-factor solution, it too was rejected because its factor structures did not add any greater clarity to describing the total score and because it explained 3.8% less variance than the 7-factor solution. Thus, the 7-factor solution was judged as the best trade-off between the amount of parsimony and comprehensiveness that it provided (Kachigan, 1991, p. 247), and it retained all 44 items of the original PALS.

Once the 7-factor solution was accepted for TSAS, the items in each factor were

compared to the items in the factors for PALS. This revealed that the factor structures were not the same for the two instruments. Therefore, the factors for the TSAS were named, and then the distribution of the items with these factor names was compared to the PALS factors.

Naming of the factors is a subjective decision made by the researcher in which names are assigned to factor with the items with the highest factors loadings playing the greatest role in determining the factor name (Sheskin, 2007, pp. 1633-1634). Based upon the factor loadings, the seven factors in TSAS were named as follows: Factor 1: Individualization, Factor 2: Learner-Centered Actions by the Teacher, Factor 3: Teacher-Centered Activities, Factor 4: Classroom Control by Teacher, Factor 5: Relating to Experience, Factor 6: Personalizing Instruction, and Factor 7: External Standards.

The names of the TSAS factors are very similar to those of PALS except for Factor 4: Assessing Student Needs and Factor 5: Climate Building of PALS. However, the items were distributed differently in the factors for the two instruments. The 10 items in Factor 1: Individualization contained 3 items from Participation Learning Process, 3 items from Personalizing Instruction, 2 items from Learner-Centered Activities, and 2 items from Assessing Student Needs. The 13 items in Factor 2: Learner-Centered Actions by the Teacher contained 3 items from Relating to Experience, 3 items from Climate Building, 2 items from Learner-Centered Activities, 2 items from Personalizing Instruction, 2 items from Assessing Student Needs, and 1 item from Participation Learning Process. The 5 items in Factor 3: Teacher-Centered Activities contained 2 items from Learner-Centered Activities, 2 items from Flexibility for Personal Development, and 1 item from Personalizing Instruction. The 5 items in Factor 4: Classroom Control by

Teacher contained 4 items from Learner-Centered Activities and 1 item from Flexibility for Personal Development. The 3 items in Factor 5: Relating to Experience were all from Relating to Experience. The 5 items in Factor 6: Personalizing Instruction were 2 items from Flexibility for Personal Development and one item each from Learner-Centered Activities, Personalizing Instruction, and Climate Building. The 3 items in Factor 7: External Standards were made up of 2 items from Personalizing Instruction and one item from Learner-Centered Activities. Thus, many of the items continued to be correlated with each other in TSAS but in smaller clusters, and these clusters then joined other clusters in forming factors. Consequently, while the factors for TSAS and PALS are similar in the concepts that they represent, they are somewhat different in the items that make up these concepts.

Reliability

Reliability is “the degree to which a test consistently measures whatever it is measuring” (Gay, Mills, & Airasian, 2009, p. 158). One type of reliability is internal consistency reliability, and this is “the extent to which items in a single test are consistent among themselves and with the test as a whole” (p. 160). Cronbach’s alpha is used to determine the reliability coefficient for internal consistency reliability for instruments that use Likert-type response choices (p. 161). Cronbach’s alpha estimates this “internal consistency reliability by determining how all items on a test relate to all other test items and to the total test” (p. 161).

Cronbach’s alpha was calculated by using the 44 items from the 1,111 responses on TSAS. This procedure produced an alpha of .68 and a standardized item alpha of .70. Although this reliability coefficient is lower than ones consistently found in studies using

PALS, these alpha values round off to the minimum .7 level for adequate internal consistency reliability (Gay, Mills, & Airasian, 2009, p. 198; Leary, 1995, p. 61).

Final Form of TSAS

The analysis of TSAS and the comparison of TSAS to PALS indicated that TSAS was similar to PALS in that it was measuring the construct of teaching style in relationship to the adult education literature base, but the analysis also indicated that there was some “noise” in the instrument. Noise is a term used in statistical analysis to refer to recognized amounts of unexplained variation in a sample. Therefore, further analysis was undertaken to reduce this noise. Because the reduction of this noise would lead to altering the 44-item structure of PALS, TSAS would be a new instrument. Therefore, in order to answer the third research question concerning the most efficient format for an instrument using the items from PALS, the standard instrument construction procedures for establishing validity and reliability were followed for creating the final form of TSAS. This process recognized that “there are different types of evidence of validity” (Wiersma & Jurs, 2005, p. 327) and that “there are multiple ways to establish the various forms of test validity” (Gay & Airasian, 2000, p. 169).

Criterion-related Validity

Construct validity, content validity, and reliability were addressed. Criterion-related validity was not addressed in this final analysis because of the close relationship between TSAS and PALS. Criterion-related validity is “determined by relating performance on a test to performance on a second test or other measure. The second test or measure is the criterion against which the validity of the initial test is judged” (Gay, Mills, & Airasian, 2009, p. 155). The steps in creating TSAS from PALS and the analysis

of the results of TSAS with a national sample of 1,111 establish the concurrent form of criterion-related validity for TSAS by demonstrating that its wording is similar to PALS, that both instruments are measuring similar factors, and that TSAS is moderately reliable in doing this. Thus, the criterion-related validity of TSAS rests in its construction from PALS and in its comparison to PALS.

Content Validity

Content validity was addressed first because this process had the potential of reducing the number of items in TSAS from the original 44 items in PALS. "Content validity is the degree to which a test measures an intended content area" (Gay, Mills, & Airasian, 2009, p. 155). It is concerned with both how relevant the items are to the content area and with how well the items sample the overall content area. Content validity is often established by the judgment of experts, but statistical procedures can also be used.

The items in TSAS were translated from PALS; therefore, the content validity of PALS was inferred for TSAS. The content validity of PALS was established by the testimonies of a local jury and a national jury in the United States. The local jury was made up on three well-established professors of adult education, and the national jury "consisted of 10 professors with a high degree of visibility in the field of adult education, with geographic dispersion throughout the country, and with philosophical heterogeneity" (Conti, 1982, pp. 139-140). These jury members not only made many contributions to the adult education literature base throughout their careers but also served in leadership roles in national organizations and on professional journals. The local jury contained Phyllis Cunningham, John Niemi, and Robert Smith; the national jury was made up of George

Aker, Gordon Darkenwald, Donnie Dutton, Mary Jane Even, Stan Grabowski, Malcolm Knowles, Alan Knox, John Peters, Kathleen Rockhill, and Don Seaman (p. 146). In the judgment of these distinguished adult education scholars, the items in PALS reflect the “adult education learning principles that are congruent with the collaborative teaching-learning mode....in which authority for curriculum formation is shared by the learner and the practitioner” (pp. 135-136).

Statistical analysis was used to measure the degree to which each item is related to the measurement of the intended content and to which the items sample the overall content being measured (Gay, Mills, & Airasian, 2009, p. 155). As with PALS, the items in TSAS are summed to produce a total score that represents the degree to which adult education practitioners accept and adhere to learner-centered principles in the adult education literature (Conti, 1982, p. 135). Content validity addresses how well each of the items in TSAS relates to this total concept of teaching style. In order to establish this content validity, the items were analyzed by examining the correlation between individual item responses and the total score on TSAS. This procedure was used in the original development of PALS, and “this procedure was used because each item is part of the overall concept, and in order for the item to be useful, it must contribute to the total score. In order to do this, it must have a moderate to strong positive correlation” (Nichols-Sharpe, 2004, pp. 127-128).

Several correlations were calculated to examine the relationship between the response on each individual item for the 1,111 participants in the national sample and the individual’s total score on TSAS. A stepwise procedure was used that is similar to that used in regression analysis (Kachigan, 1991, p. 153; Sheskin, 2007, p. 1435); however,

this procedure was used for removing items from the original 44 items in TSAS. That is, after each correlation was calculated, the results were examined, and the item with the lowest correlation was removed if it did not have at least a positive .2 correlation with the total score. For the next step, this item was removed from the summation for total score, and a new total score was calculated without this item. After repeating this procedure 14 times, all items but one correlated at least at the .2 level with the total score. Item 29 had a correlation of .17 at this step, but it was retained in the scale because this correlation rounded up to .2, because removing it only improved the total difference in the correlations between this step and the next one by .04, and because retaining it provided for a number of items that was a multiple of 10. The following items were removed: 2, 4, 7, 11, 12, 13, 21, 26, 27, 33, 37, 38, 40, and 41; all of these were negative items. The remaining items in the final form of TSAS had the following correlations with the total score: .60 to .69–6, .50 to .59–6, .40 to .49–9, .30 to .39–4, .20 to .29–4, and .17–1 (see Table 3). All correlations were significant at the .001 level.

Item	1	3	5	6	8	9	10	14	15	16
Correlation	0.48	0.22	0.45	0.42	0.22	0.47	0.45	0.47	0.55	0.31
Item	17	18	19	20	22	23	24	25	28	29
Correlation	0.53	0.60	0.21	0.56	0.29	0.58	0.67	0.62	0.32	0.17
Item	30	31	32	34	35	36	39	42	43	44
Correlation	0.32	0.58	0.63	0.36	0.66	0.63	0.45	0.40	0.52	0.42

Construct Validity

Construct validity “reflects the degree to which a test measures an intended hypothetical construct” (Gay, Mills, & Airasian, 2009, p. 157); for TSAS, this is the construct of teaching-style as it relates to support of the collaborative mode in the adult

education literature (Conti, 1982). “Construct validity is the most important form of validity because it asks the fundamental validity question: What is this test really measuring?” (Gay, Mills, & Airasian, 2009, p. 157). Because constructs are nonobservable traits that have been constructed to explain behavior (p. 157), items in an instrument deal with the effects of this behavior. Just as for PALS, the items in TSAS deal with “several things that a teacher of adults might do in a classroom” (Conti, 2004, p. 87) “based upon the body of theory and knowledge which is advanced in the literature by prominent adult educators who support the collaborative teaching-learning mode” (Conti, 1982, p. 139). The construct validity of these items and the overall TSAS was established in two ways.

First, just as with content validity, the construct validity of the items in TSAS can be inferred from PALS. The local and national juries that testified to the content validity of PALS also testified to the construct validity of PALS (Conti, 1982, pp. 139-140). The positive judgement of major theorists such as Malcolm Knowles and Robert Smith and of journal editors such as Phyllis Cunningham and Gordon Darkenwald strongly supports the construct validity of the items from PALS which were used in the final version of TSAS.

Second, factor analysis was used to identify the underlying elements composing teaching style as measured by TSAS. This factor analysis used the responses to the final 30-item form of TSAS. The responses from the 1,111 participants in the national sample were factor analyzed using a principal components analysis with a varimax rotation. The analysis produced a solution with 6 factors with eigenvalues greater than 1. To explore for the best fit of the data with the final form of TSAS, additional factor analyzes were

run with the number of factors fixed at 2, 3, 4, and 5. The 5-factor solution was the best fit for the data because it produced the best distribution of items in the factors. All 30 items loaded into 5 factors that explained 45.25% of the variance in the analysis. The factor loadings ranged from .749 to .325 and were distributed as follows: .70 to .79–5, .60 to .69–9, .50 to .59–8, .40 to .49–7, and .30 to .39–1 (see Table 4).

TSAS		Description	PALS	
Load	Item		Factor	Item
Factor 1: Participation in the Learning Process				
0.749	23	I gear my instructional objectives to match the individual abilities and needs of the students.	2	32
0.746	18	I help my students develop short-range as well as long-range objectives.	4	25
0.734	16	I have individual conferences to help students identify their educational needs.	4	23
0.730	17	I let each student work at his/her own rate regardless of the amount of time it takes him/her to learn a new concept.	2	24
0.667	25	I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.	2	35
0.644	26	I have my students identify their own problems that need to be solved.	6	36
0.545	1	I allow students to participate in developing the criteria for evaluating their performance in class.	6	1
0.528	9	I allow students to participate in making decisions about the topics that will be covered in class.	6	15
0.415	22	I plan activities that will encourage each student's growth from dependence on others to greater independence.	3	31
Factor 2: Relating to Experience				
0.734	30	I teach units about problems of everyday living.	3	44
0.647	24	I encourage my students to ask questions about the nature of their society.	3	34
0.609	27	I organize adult learning episodes according to the problems that my students encounter in everyday life.	3	39
0.592	29	I help students relate new learning to their prior experiences.	3	43
0.427	8	I plan learning episodes to take into account my students' prior experiences.	3	14
Factor 3: Climate Building (Create Learning Climate)				
0.651	5	I participate in the informal counseling of students.	4	8
0.601	7	I arrange the classroom so that it is easy for students to interact.	6	10
0.519	3	I help students diagnose the gaps between their goals and their present level of performance.	4	5
0.483	15	I accept errors as a natural part of the learning process.	5	22
0.469	12	I encourage dialogue among my students.	5	18

0.449	14	I utilize the many competencies that most adults already possess to achieve educational objectives.	5	20
Factor 4: Learner-Centered Activities				
0.698	6	I use lecturing as the best method for presenting my subject material to adult students.	2	9
0.683	4	I provide knowledge rather than serve as a resource person.	7	6
0.554	10	I use one basic teaching method because I have found that most adults have a similar style of learning.	1	16
0.523	20	I use methods that foster quiet, productive, deskwork.	1	29
0.508	21	I use tests as my chief method of evaluating students.	1	30
0.492	13	I use written tests to assess the degree of academic growth in learning rather than to indicate new directions for learning.	1	19
Factor 5: Personalizing Instruction				
0.626	2	I allow older students more time to complete assignments when they need it.	2	3
0.581	19	I allow my students to take periodic breaks during the class.	5	28
0.401	11	I use different techniques depending on the students being taught.	2	17
0.325	28	I use different materials with different students.	2	42

The five factors were named based upon the factor loadings. This process was supplemented by comparing the loadings in TSAS to the item distribution in the factors in PALS. The five factors in the final form of TSAS were named as follows: Factor 1: Participation in the Learning Process, Factor 2: Relating to Experience, Factor 3: Climate Building, Factor 4: Learner-Centered Activities, and Factor 5: Personalizing Instruction. Because of the resemblance of the TSAS factors to the PALS factors, the TSAS factors were named the same as five of the PALS factors. Six of the nine items in Factor 1: Participation in the Learning Process are from Factor 6: Participation in the Learning Process and Factor 2: Personalizing Instruction of PALS; most research with PALS shows a strong correlation between these two factors. All five of the items in Factor 2: Relating to Experience were from the factor with this same name in PALS. Similarly, three of the six items in Factor 3: Climate Building were from the factor with this same name in PALS, and the other three items describe what Knowles (1970) refers to as the

physical or psychological elements of climate building (p. 41); this factor may also be referred to as Create Learning Climate because this phrase translates more clearly to Japanese. Factor 4: Learner-Centered Activities contained the six remaining negative items in TSAS, and four of the items were from the factor with this same name in PALS. Three of the four items in Factor 5: Personalizing Instruction were from the factor with this same name in PALS, and the other item strongly supported this name. Thus, this strong resemblance of the factors to the PALS factors supports the construct validity of TSAS as well as its criterion-related validity.

Reliability

Reliability was established for TSAS both for its internal consistency and for its stability over time. Cronbach's alpha was used to establish the internal consistency reliability of the 30-item form of TSAS. It was calculated by using the 30 items from the 1,111 responses on TSAS. This procedure produced an alpha of .86 and a standardized item alpha of .87. These coefficients indicate strong internal consistency reliability for the final form of TSAS and are similar to the high reliability coefficients found in research with PALS.

The test-retest procedure was used to establish the stability of TSAS over time. Test-retest was administered to 30 educators as convenience and snowball sampling, 12 from universities, 4 from junior colleges, 14 from nursing diploma schools. The retest was administered two weeks later.

The correlation coefficient was 0.9, which is high. It indicates strong stability of TSAS. Correlation was significant at the 0.01 level.

Norms for TSAS

As a result of the development and validation process, the Teaching Style Assessment Scale is a 30-item summated rating scale (see Appendix) that “measures the frequency with which one practices teaching/learning principles that are described in the adult education literature” (Conti, 2004, p. 79). In order to provide a reference for interpreting the total score on TSAS and its factors, the means and standard deviations were calculated for TSAS and its five factors (see Table 5). These descriptive statistics provide norm-referenced scoring based on the normal distribution against which a person’s performance (Gay, Mills, & Airasian, 2009, p. 149) on TSAS can be compared to that of the 1,111 participants in the national sample.

Table 5: Mean and Standard Deviation for TSAS and Factors

Statistics	TSAS	Factor				
		1	2	3	4	5
Mean	81	22	17	23	10	9
Std. Dev.	15	7	3	3	4	3

The mean score on TSAS is 81. This is an average of 2.7 points for each of the 30 items in TSAS ($81/30 = 2.7$), and it is slightly to the learner-center side of the mid-point of 75 for the total range of the scale which is 0 to 150. This indicates an average choice near the midpoint of 2.5 on the scale but slight toward the option of “Often” on PALS scale once the scale is reversed to reflect positive items.

Scoring TSAS

TSAS is a 30-item summated rating scale. Although PALS uses a six-point Likert-type scale ranging from Always to Never (Conti, 2004, p. 79), the scale has been reversed for TSAS because most of the negative items from PALS have been removed through the validation process, and reversing the scale greatly reduces the number of

items that need to be rescored for scoring. Therefore, the 6-point Likert-type scale for TSAS is as follows: 0–Never, 1–Almost Never, 2–Seldom, 3–Often, 4–Almost Always, and 5–Always.

The first step in scoring TSAS is to rescore the negative items. Items number 4, 6, 10, 13, 20, and 21 are negative items. For these negative items, assign the following values: Always=0, Almost Always=1, Often=2, Seldom=3, Almost Never=4, and Never=5. Omitted items are assigned a neutral value of 2.5; this value puts the response in the middle of the scale and does not skew the overall score toward either the teacher-centered or learner-centered side.

After the negative items are rescored, the total score is obtained by summing the values of the responses to all 30 items. Scores may range from 0 to 150. Respondents' overall teaching style and strength of commitment to that style can be judged by comparing their score to the mean score of 81; scores above 81 "indicate a tendency toward the learner-centered mode while lower scores imply support of the teacher-centered approach" (Conti, 2004, p. 79).

Factor scores are computed by adding up the points for each item in the factor, and the factor scores can be interpreted by comparing the score to the mean for the factor. The five factor scores can provide greater detail and description to the overall teaching style score.

Each factor contains a similar group of items that make up a major component of teaching style. The support of the collaborative mode in the adult education literature is reflected in the names of the factor titles. High scores in each factor represent support of the learner-centered concept

implied in the factor name. Low factor scores indicate support of the opposite concept. (Conti, 2004, p. 80)

CHAPTER 5

DISCUSSION

Discussion

Teaching style has been a popular concept in the educational literature for many years. A primary reason for this is that teachers are professionals and care deeply about what they are doing in the teaching-learning transaction. Moreover, many teachers of adults have not had the formal training in the colleges of education in the universities that brings them into contact with the field's literature base. Valid and reliable instruments such as the Principles of Adult Learning Scale provide an objective tool for them to assess their classroom practices and their beliefs about these practices. Such an assessment is an important step in what Schon (1987) describes as reflection-in-action. This view of professional practice "reinforces the need for teachers to assess their style and to reflect upon the implications which that style has for their learners in the classroom" (Conti, 2004, p. 76).

For many years, the Principles of Adult Learning Scale (PALS) has been a major instrument for measuring teaching style for the teachers of adults. However, a new valid and reliable instrument, the Teaching Style Assessment Scale (TSAS), now exists. TSAS was derived from PALS and consequently carries with it the long history of validity and reliability of PALS. Construct validity was inferred from the items in PALS and was confirmed by factor analysis based on a national sample of 1,111 in Japan. Content

validity was also inferred from the items in PALS and was established for the items in TSAS by examining the correlation between individual item responses and the total score on TSAS. The criterion-related validity of TSAS rests on its development from PALS and on its comparison to PALS from the national data. Internal consistency reliability was established by using Cronbach's alpha.

TSAS is similar to PALS but has some important differences. The purpose and general structure of the two instruments are the same. However, TSAS contains 14 or 31.8% less items than PALS. Although TSAS contains two less factors than PALS and although the items in TSAS combine in a slightly different fashion than in PALS, the five factors in TSAS match factors in PALS. Both instruments use the same interval labels on a 6-point Likert-type scale, but the poles of the scale have been reversed in TSAS for ease of scoring and to better match the Japanese cultural approach to test items.

One major difference between TSAS and PALS is that TSAS is about one-third shorter. One general principle of test construction is to improve the efficiency of instruments by keeping them as short as possible. The content analysis process revealed that by removing 14 items from PALS the overall statistical strength of the new instrument improved. All 14 items that were removed were items that were worded to be negative items related to a concept in the adult education literature. Although including negative items in an instrument is encouraged in the test-construction literature, the concept of using negative items is not common in the Japanese culture, and these items may have been confusing to many of those in the sample. While PALS has only 4 more positive items than negative items, only 6 of the 20 negative items in PALS were strong enough to be included in TSAS, and all of these items loaded on the same factor in the

factor analysis. Because instruments with both positive and negative items require the rescoring of one set of these items, TSAS is easier to score than PALS because only six items need to be rescored as a result of reversing the poles on the response scale.

Like PALS, TSAS is based upon the literature in which “the central question of how adults learn has occupied the attention of scholars and practitioners since the founding of adult education as a professional field of practice in the 1920s” (Merriam, 2001, p. 3). While there has been important developments in the field’s literature base since PALS was developed, the twin pillars of adult learning theory have remained andragogy and self-directed learning (p. 3), and these are reflected both in the literature used for the items in PALS and in the makeup of the juries that were used to establish the construct and content validity of PALS. With this link to the theory base, TSAS is like PALS and “measures the frequency with which one practices teaching/learning principles that are described in the adult education literature” (Conti, 2004, p. 79).

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

TSAS can be used for either self-assessment or as a research tool. In order to know how they relate to the concepts in the adult education literature base, teachers need an objective measure to identify their teaching style. TSAS not only provides an overall score that indicates the teacher's support for a teaching style, but it also provides five factor scores that identify specific classroom behaviors that make up this style. By critically analyzing their responses to each item in each of the factors, teachers can reflect upon their classroom actions related to that style and upon consistency in their style. This can then be related to adult learning theory.

Recommendations

This self-assessment function for TSAS is especially important in Japan. Faculty development has been mandatory for educators in Japan since 2007 (Kaisetsu-kyouikuropouhensyuiinkai, 2013, pp. 294, 302). However, many of the universities have struggled with providing these faculty development activities. While most of the training activities have focused on active learning, the likelihood of these activities being implemented is low if the teachers are not able to recognize how these activities relate to their overall approach to teaching which includes their beliefs about the teaching-learning transaction. TSAS can serve as a tool to initiate and direct the reflective process teachers

need to go through before they integrate new ideas in the classroom.

TSAS can also be used in research. As with PALS, TSAS can be used in a variety of situations and settings that involve adult learners. While PALS has been used both in the United States and in international studies, “60.2% have been descriptive in nature while 39.8% were relational studies” (Byrd, 2010, pp. 91-92). Descriptive studies are needed to supply a baseline for organizations and agencies to provide a better understanding of current practices before professional development activities are undertaken; past research indicates that this research can be very diverse (pp. 92-95). Relational studies examine the relationship of teaching style to other variables, and PALS relational studies have addressed variables such as beliefs, distance, and student outcomes (pp. 95-99). TSAS can be used in similar ways as well as in studies that examine the relationship of PALS and TSAS to each other in various settings and in studies that further confirm the norms for TSAS.

Thus, TSAS is a new, valid, and reliable instrument that can be used for measuring teaching style practices both at the individual and organizational level. The stimulus for its development was the need to assess the teaching style of nursing educators in order to design professional development activities based on adult learning theory that foster critical thinking skills to implement Evidence-Based Nursing in Japan. However, the result has been the development of a statistically strong instrument that can be used in any situation involving the adult teaching-learning transaction. Adult education practitioners are encouraged to use TSAS in their daily practice and in their research. Such use can contribute to improved professional practice and to expanding the adult education knowledge base.

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APPENDIX

Teaching Style Assessment Scale (TSAS)

Directions

The following survey contains several things that a teacher of adults might do in a classroom. You may personally find some of them desirable and find others undesirable. For each item please respond to the way you most frequently practice the action described in the item. Your choices are Always, Almost Always, Often, Seldom, Almost Never, and Never. On your answer sheet, circle 5 if you always do the event; circle number 4 if you almost always do the event; circle number 3 if you often do the event; circle number 2 if you seldom do the event; circle number 1 if you almost never do the event; and circle number 0 if you never do the event. If the item **does not apply** to you, circle number 0 for never.

Always	Almost Always	Often	Seldom	Almost Never	Never
5	4	3	2	1	0

1. I allow students to participate in developing the criteria for evaluating their performance in class.
2. I allow older students more time to complete assignments when they need it.
3. I help students diagnose the gaps between their goals and their present level of performance.
4. I provide knowledge rather than serve as a resource person.
5. I participate in the informal counseling of students.
6. I use lecturing as the best method for presenting my subject material to adult students.
7. I arrange the classroom so that it is easy for students to interact.
8. I plan learning episodes to take into account my students' prior experiences.
9. I allow students to participate in making decisions about the topics that will be covered in class.
10. I use one basic teaching method because I have found that most adults have a similar style of learning.
11. I use different techniques depending on the students being taught.
12. I encourage dialogue among my students.
13. I use written tests to assess the degree of academic growth in learning rather than to indicate new directions for learning.
14. I utilize the many competencies that most adults already possess to achieve educational objectives.
15. I accept errors as a natural part of the learning process.
16. I have individual conferences to help students identify their educational needs.

17. I let each student work at his/her own rate regardless of the amount of time it takes him/her to learn a new concept.
18. I help my students develop short-range as well as long-range objectives.
19. I allow my students to take periodic breaks during the class.
20. I use methods that foster quiet, productive, deskwork.
21. I use tests as my chief method of evaluating students.
22. I plan activities that will encourage each student's growth from dependence on others to greater independence.
23. I gear my instructional objectives to match the individual abilities and needs of the students.
24. I encourage my students to ask questions about the nature of their society.
25. I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.
26. I have my students identify their own problems that need to be solved.
27. I organize adult learning episodes according to the problems that my students encounter in everyday life.
28. I use different materials with different students.
29. I help students relate new learning to their prior experiences.
30. I teach units about problems of everyday living.

Scoring Teaching Style Assessment Scale

Positive Items

Items number 1, 2, 3, 5, 7, 8, 9, 11, 12, 14, 15, 16, 17, 18, 19, 22, 23, 24, 25, 26, 27, 28, 29, and 30 are positive items. For positive items, assign the following values: Always=5, Almost Always=4, Often=3, Seldom=2, Almost Never=1, and Never=0.

Negative Items

Items number 4, 6, 10, 13, 20, and 21 are negative items. For negative items, assign the following values: Always=0, Almost Always=1, Often=2, Seldom=3, Almost Never=4, and Never=5.

Missing Items

Omitted items are assigned a neutral value of 2.5

Factors

Factor 1: Participation in the Learning Process

Factor 1 contains items number 1, 9, 16, 17, 18, 22, 23, 25, and 26.

Factor 2: Relating to Experience

Factor 2 contains items number 8, 24, 27, 29, and 30.

Factor 3: Climate Building (or Create Learning Climate)

Factor 3 contains items number 3, 5, 7, 12, 14, and 15.

Factor 4: Learner-Centered Activities

Factor 4 contains items number 4, 6, 10, 13, 20, and 21.

Factor 5: Personalizing Instruction

Factor 5 contains items number 2, 11, 19, and 28.

Computing Scores

Overall Teaching Style Score: An individual's total score on the Teaching Style Assessment Scale (TSAS) is calculated by summing the value of the responses to all items. This total score indicates the overall teaching style and the strength of the teacher's support of this style. The mean or average for TSAS is 81 with a standard deviation of 15. Scores above 81 indicate a tendency toward the learner-centered approach of instruction while scores below 81 imply support of the teacher-centered approach.

Standard deviations refer to positions on the normal, bell-shaped curve. Most scores will be within one standard deviation of the mean; that is, they will be between 66 and 96. Movement toward these scores indicates an increased commitment to a specific teaching style. Scores that are in the second standard deviation of 15 to 30 points different from the mean indicate a very strong and consistent support of a definitive teaching style. Scores that are in the third standard deviation of at least 30 points from the mean indicate an extreme commitment to a style.

Factor Scores: Factor scores are calculated by summing the value of the responses for each item in the factor. The factor score values are as follows:

Factor	Mean	Standard Deviation
1	22	7
2	17	3
3	23	3
4	10	4
5	9	3

Teaching Style Assessment Scale (TSAS) in Japanese

ティーチングスタイルアセスメントスケール

先生がご担当されている授業を想起して、下記の質問にご回答ください
質問ごとに最も該当する番号を1つ選び、その番号を○で囲んでください

いつもする	たびたび する	時々する	あまりしない	殆んどしない	しない
5	4	3	2	1	0

1	学生の意見を取り入れて、授業参加度の評価基準を作成する
2	必要に応じて課題提出期限を延ばす
3	学生が学習目標を達成できるように指導する
4	授業では、ファシリテーター(学習支援)になるというより、むしろ知識を与える
5	学生の相談に気軽に応じる
6	授業では、教師主導で講義を行う
7	教室内では、学生が話しやすい雰囲気づくりをする
8	学生たちのこれまでの経験を考慮して、授業計画を立てる
9	授業で取りあげるテーマを決める際に、学生の意見を取り入れる
10	教育方法は固定させている
11	教える学生により、違った教育方法を使う
12	学生間の対話を勧める
13	筆記試験を、学習の新たな学習課題の確認のためというよりも学習成果の測定として行う
14	教育目標を達成するために、学生の能力を活用する
15	学びの自然な過程として、学生の誤りを受け入れる
16	個々の学生が学習上必要なことが明確になるよう、個別面接をする
17	新しい概念を学生一人ひとりのペースで学べるようにする
18	学生が長期的目標と短期的目標を設定できるように手助けする
19	授業中に、学生が定期的な休憩を取ることを許す
20	講義は静粛に受けるように促す
21	主な評価方法として、試験を用いる
22	学生の自立を促すような活動を計画する
23	学生一人ひとりの能力や必要に応じて指導目標を変える
24	学生が自身を取り巻く社会への疑問をもつことを勧める
25	継続教育への動機を基にして、学生自身で学習目標を立てられるようにする
26	解決が必要な学生自身の問題を学生自身で明確にできるようにする
27	授業は、学生が日々直面しやすい問題を考慮して組み立てる
28	学生それぞれ(あるいはグループ毎)に異なる教材を使う
29	学生が、新たな学びを過去の経験に結びつけられるように手助けする
30	授業では日常生活の問題をとり挙げる