Quality of Life in School (QoLS) Questionnaire: Development and Validity

Naomi Weintraub, Asnat Bar-Haim Erez

OBJECTIVE. We describe the development and examination of the construct validity of the Quality of Life in School (QoLS) questionnaire for elementary-age students.

METHOD. The QoLS evolved through four phases in which we devised its items and examined its construct validity. Examination of the construct validity of the final version of the QoLS included 353 students in third through sixth grades.

RESULTS. Factor analysis identified four categories within the questionnaire’s items: student–teacher relations, school and classroom physical environment, positive feelings toward school, and negative feelings toward school. Internal consistency indicated a high correlation among the items in each of the factors. In addition, third-grade students reported significantly higher perception of school quality of life (QOL) than their older peers.

CONCLUSION. The QoLS may assist clinicians and educators in evaluating students’ school QOL from a multidimensional perspective, including the school’s physical environment, which has received little attention.


During the past two decades, clinicians and educators have been required to systematically evaluate the effectiveness of their intervention or instruction using valid and reliable measures. Following the client-centered approach (Law, Baum, & Dunn, 2001), the outcome measures used often reflect clients’ needs and desires. Consequently, assessing clients’ quality of life (QOL) has become more prevalent not only among occupational therapists (AOTA, 2002) but also among medical, psychosocial, and educational services (Lunenburg & Schmidt, 1989; Warschburger, Landgraf, Petermann, & Freidel, 2003).

The awareness of the importance of evaluating clients’ QOL is also the result of a paradigm shift from a medical model to a biopsychosocial one. The biopsychosocial model is multidimensional and emphasizes the mutual relationships among the person, the activities he or she needs or wants to perform, and the context in which these activities are performed (i.e., physical, social, and attitudinal; Simeonsson et al., 2003; World Health Organization [WHO], 2001). These dimensions are believed to influence people’s health and participation in daily activities and thus affect their QOL (AOTA, 2002; WHO, 2001).

Definitions of Quality of Life

Following the biopsychosocial model, the QOL group of WHO defined QOL as “individuals’ perception of their position in life, in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards...
and concerns” (WHOQOL Group, 1995, p. 1405). Although QOL is also based on objective measures (Lefort & Fraser, 2002; Schalock, 2004), this definition suggests that QOL is a subjective feeling, relating to one’s personal well-being and happiness. In addition, from this definition one can see that QOL and well-being are often used interchangeably. Moreover, Ziviani, Desha, and Rodger (2006) defined well-being as a state that “consists of both affective components (happiness) and cognitive–judgmental components (life satisfaction)” (pp. 96, 98), suggesting that life satisfaction also refers to QOL and well-being.

To date, most QOL research has focused on adults (Mansour et al., 2003; Warschburger et al., 2003). Other studies have concentrated on children with chronic health conditions or disabilities. Only a few studies have examined the QOL of typically developing children, and many of these are based on health-related QOL measures (Connolly & Johnson, 1999). Yet, QOL is a broader construct, and thus health-related QOL is often considered as a subdomain of the more global construct of QOL (Davis et al., 2006).

WHO’s definition of QOL emphasizes the importance of viewing the person’s context while measuring QOL (WHOQOL Group, 1995). Similarly, various occupational therapy models place much emphasis on people’s context, assuming that a person’s occupational performance is the result of a transaction among the person’s abilities, the occupations he or she needs or wants to perform, and the environment in which these occupations are performed (AOTA, 2002; Law et al., 2001). One such context that plays an important role in children’s lives is the school environment (Ziviani & Muhlenhaupt, 2006).

School-Related QOL

In recognition of the importance of school in children’s lives, WHO (2007) has recently acknowledged the need to promote students’ health in the school context. One of the stated purposes of the Global School Health Initiative launched by WHO (2007) was to create a healthy environment in the schools that respects a person’s well-being and dignity and provides multiple opportunities for success. This initiative reflects the growing awareness of the relationship between students’ health and their school performance and satisfaction (Karatzias, Power, & Swanson, 2001; Lear, 2002; Mansour et al., 2003; Rask, Astedt-Kurki, Tarka, & Laippala, 2002). Moreover, studies have shown a significant relationship among students’ perceived QOL, satisfaction, attitudes toward school, relationship with teachers, and school achievement (Epstein & McPartland, 1976; Linnakyla, 1996; Mok & Flynn, 2002). By contrast, dissatisfaction with school has been found to relate to behavioral problems and poor achievement (Karatzias et al., 2001). Therefore, the role of schools in general, and of school-based occupational therapists in particular, is to strive to promote not only students’ academic success, but also students’ social and emotional QOL (Malin & Linnakyla, 2001; Ziviani & Muhlenhaupt, 2006).

To promote students’ QOL in school, one must first understand what school QOL encompasses and evaluate students’ QOL within this context. One definition of school QOL refers to “students’ general well-being and satisfaction, from the point of view of their positive and negative experiences, particularly in activities typical of school” (Malin & Linnakyla, 2001, pp. 70–71). These experiences are a result of students’ involvement in school life (Karatzias et al., 2001).

Although students’ QOL at school is an important issue, over the years, only a few instruments measuring this construct have been developed (e.g., Epstein & McPartland, 1976; Karatzias et al., 2001; Linnakyla, 1996), most of which focused on high school students. The measures that did relate to elementary school students were incomplete; they addressed only a few dimensions of school QOL—for example, students’ feelings toward school and teacher–student relationships—but not others such as satisfaction with school activities and the physical environment.

Current theoretical models relating to people’s health and well-being, such as the biopsychosocial model (WHO, 2001) and models relating to occupational performance (e.g., the Person–Environment–Occupational Model [Law et al., 1996], the Person–Environment–Occupation–Performance Model [Christiansen, Baum, & Bass Haugen, 2005]), have established that the physical environment may enhance or impede people’s participation in daily life activities (Law, 2002). Thus, the school physical environment may play an important role in facilitating students’ academic performance, social participation, and well-being (Konu & Rimpela, 2002; Weinstein, 1979; Ziviani & Muhlenhaupt, 2006). Therefore, when measuring students’ school QOL, it is important to include questions relating to the school’s physical environment.

Factors Related to Quality of Life at School

Given the complexity of the QOL construct, it is not surprising that studies have shown that various factors may affect students’ perceptions of QOL. Several studies examined the influence of gender on students’ perceptions of QOL. Although most studies did not find a significant gender effect on the perceptions of QOL among typically developing students (e.g., Gilman & Huebner, 2006; Mok & Flynn, 2002; Ng, Chong Lim, Jin, & Shinfuku, 2005), Malin and
Lynnakyla (2001) reported that typically developing girls were generally more satisfied at school than were typically developing boys.

Students’ age is another factor that was consistently found to influence perceptions of QOL. Older students usually reported lower QOL than their younger peers (e.g., Epstein & McPartland, 1976; Gilman & Huebner, 2006; Ng et al., 2005). The study by Park (2005), for example, showed that the phenomenon in which student satisfaction decreases with age is not confined to school QOL. Park’s study focused on age differences (e.g., elementary, middle, and high school students) in relation to global and domain-specific (e.g., family, school, living environment, self) life satisfaction. Results showed that in each of these factors, students’ satisfaction decreased with age. In other words, as students grew older, they were less satisfied in general, specifically with family, school, and themselves.

In this article, we describe the development of the Quality of Life at School (QoLS) questionnaire (Weintraub & Bar-Haim Erez, 2007) and the process of its validation, following steps suggested by Benson and Clark (1982). The QoLS was constructed to assess elementary school students’ perception of their QOL at school. It is based on the biopsychosocial model of functioning (WHO, 2001) and on Malin and Lynnakyla’s (2001) theoretical definition of school QOL (described earlier). Following this definition, the QoLS addressed students’ feelings of well-being and satisfaction at school, considering their positive and negative experiences in this context, their relationship with teachers, and their satisfaction with the physical environment.

We present four phases, each representing a different stage in the development and validation of the QoLS. In the first phase, we focused on the construction of the QoLS. In the second phase, we tested the QoLS pilot version and its initial validity. In the third phase, we created the final version of the QoLS, and in the fourth phase, we examined its construct validity.

**Phase 1: Constructing the Quality of Life at School Questionnaire**

The purpose of this phase was twofold: (1) to generate a list of items that together would measure the construct of school QOL and (2) to select and examine the appropriateness of the response format. These objectives were attained in two stages.

**Stage 1: Generation of Items**

The list of items was generated from two major sources. The first source was theoretical literature pertaining to the topic of children’s QOL in general and school QOL in particular (e.g., Baker, 1999; Epstein & McPartland, 1976; Huebner, 1991; Keith & Schalock, 1994; Lynnakyla, 1996; Lunenburg & Schmidt, 1989). The information from the literature enabled us to establish the initial factors that were found to measure QOL at school and items that may measure these factors. The second source was interviews with approximately 30 students, parents, and teachers from a diverse cultural background in Israel (i.e., secular and religious Arabs and Jews), using a semistructured questionnaire based on the literature review mentioned earlier. The questionnaire related to various factors, including the social and physical environment at school, student–teacher relationships, school climate, general feelings toward school, and subjective feelings toward oneself.

**Stage 2: Examination of the Response Format**

We conducted this stage in parallel with Stage 1. In the process of reviewing the literature, we examined various questionnaires measuring children’s QOL (e.g., Karatzias et al., 2001; Malin & Lynnakyla, 2001), focusing on their response formats. With the purpose of examining the appropriateness of the response format selected, we devised a list of 24 items phrased as statements that represented the different factors. Each item was scored on a 5-point Likert-type scale ranging from 1 (causes me to feel very bad) to 5 (causes me to feel very good). The items were presented to the children mentioned in Step 1, after the administration of the semistructured questionnaire.

On the basis of the children’s responses, it was clear that using a 5-point scale and asking children whether the statement made them feel very good or very bad did not sufficiently reflect the students’ feelings and reality. Therefore, we decided to use a 4-point scale ranging from 1 (never true, representing the answer that least described the children’s reality) to 4 (always true, representing the answer that most described their reality). We examined the suitability of the alternative response format in Phase 2. On the basis of the data gathered in Phase 1, we constructed a pilot questionnaire that included 83 items.

**Phase 2: Testing the QoLS Pilot Version and Initial Validity**

The goals of this phase were to test the pilot version of the QoLS and to establish initial construct validity. These goals were attained in two stages.

**Stage 1: Qualitative Evaluation**

We carried out the qualitative evaluation of the 83 items devised in Phase 1 by reading each of the items to 20 children in second through sixth grades (equal numbers in each
grade level) and asking each student to explain what he or she thought was being asked. Items that children found too difficult to comprehend or misunderstood were rephrased or deleted. After this stage, we created a pilot version of the QoLS consisting of 68 items.

**Stage 2: Examination of Initial Construct Validity**

The purpose of this stage was to establish initial construct validity using factor analysis and internal consistency procedures.

**Participants**. The pilot version of the QoLS was administered to 208 students (all Hebrew speaking) from second through sixth grades (51.7% boys and 48.3% girls) from three general education schools in central Israel.

**Results**. We conducted a factor analysis on the basis of the collected data and identified three factors: (1) physical environment and participation in school activities, (2) teacher–student relationship and social environment, and (3) students’ self-perception and satisfaction with life. Items that did not fit into any of these factors were deleted. On the basis of previous studies and the theoretical literature, we decided that it would be most appropriate to divide Factors 1 and 2 into two categories each, thus creating five categories. These five categories were the (1) physical environment, (2) teacher–student relationship, (3) social environment, (4) participation in school activities, and (5) self-perception and satisfaction with life.

Next, we carried out internal consistency analysis for each of the factors and for the total score. Consequently, we eliminated items that appeared unrelated to the other items in the factor (i.e., the $\alpha$ value increased with their deletion). After these two procedures (i.e., factor analysis and internal consistency analysis), we shortened the questionnaire to 40 items. The final Cronbach’s $\alpha$ levels were as follows: physical environment, .853; teacher–student relationship, .827; social environment, .829; participation in school activities, .763; and students’ self-perception and satisfaction with life, .717.

**Phase 3: Creating the Final Version of the QoLS**

We had two objectives in Phase 3: (1) Examine the new response format and (2) examine the construct validity of Version 2 of the QoLS and consequently establish the final version.

**Participants**

This phase included 353 elementary school students in third through sixth grades from eight general education schools in Israel. The schools varied in terms of their student populations’ socioeconomic status. Second-grade students were not included; after Phase 2, it became apparent that although these students understood the questions, their reading level was not sufficient for them to complete the QoLS independently.

Each classroom included between 30 and 40 students. As can be seen in Table 1, the sample included a similar number of boys ($n = 180$) and girls ($n = 173$). Students were included in this phase if their parents granted permission for their participation, they had no neurological symptoms and no physical disability, and they were not receiving special education services.

**Procedure**

After obtaining permission from the Ministry of Education’s ethical committee and the school administrators, parents were asked to permit their children to participate in the study. Next, teachers received an explanation of the study’s purpose, and a time period for administering the questionnaires was set. Occupational therapy graduate students who were trained in administering the questionnaires entered each of the classrooms. The graduate students explained the purpose of the study, the voluntary aspect of participation, and that the questionnaires were anonymous (i.e., names were not required on the questionnaire so children could feel comfortable stating what they felt without penalty). This process was repeated in each classroom.

**Data Analysis**

We performed factor analysis with Varimax rotation to determine the different factors of the QoLS. We examined internal consistency using Cronbach’s $\alpha$ to ascertain how strongly the items in each of the factors were related to each other.

**Results**

**Response Format**. First, we examined the QoLS’s new response format, that is, the 4-point scale on which students rated each item from 1 (never true) to 4 (always true). Analysis of the data showed that there was greater variance in student replies compared with the previous response format (i.e., a 5-point scale relating to feeling good or feeling bad).

**Table 1. Distribution of Study Population by Gender and Grade Level**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Boys (n)</th>
<th>Girls (n)</th>
<th>Total (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>21</td>
<td>16</td>
<td>37</td>
</tr>
<tr>
<td>4</td>
<td>64</td>
<td>66</td>
<td>130</td>
</tr>
<tr>
<td>5</td>
<td>61</td>
<td>46</td>
<td>107</td>
</tr>
<tr>
<td>6</td>
<td>34</td>
<td>45</td>
<td>79</td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
<td>173</td>
<td>353</td>
</tr>
</tbody>
</table>
**Construct Validity of Version 2 of the QoLS.** We performed factor analysis to determine the underlying domains (factors) represented by the construct of QOL at school. On the basis of the findings with the pilot version of the QoLS, we initially carried out a five-factor analysis. However, one of the factors included only three items and did not justify a factor by itself. Therefore, we performed a four-factor analysis, which yielded these factors: (1) items relating to the relationship between teachers and students and participation in school activities (eigenvalue = 5.8); (2) items relating to the physical environment of the school and classroom (eigenvalue = 5.1); (3) items related to students’ positive feelings toward school, which included social and school-related issues (eigenvalue = 2.5); and (4) items related to students’ negative feelings toward school, which included social and school-related issues (eigenvalue = 5.0). The percentage of variance in QoLS explained by these factors was 50.9.

To establish the QoLS’s internal consistency, we carried out Cronbach’s α analysis for each of the four factors and for the total score. Consequently, we eliminated four items that appeared unrelated to the other items in the factor and thus shortened the questionnaire to 36 items.

**Phase 4: Examining the Construct Validity of the QoLS Final Version**

To establish the construct validity of the final version of the QoLS, we used the same sample described earlier.

**Measure**

The final version of the QoLS included 36 items, which were divided into four categories (factors): (1) teacher–student relationship and school activities (12 items), which included items such as “I like my teacher” and “I like the various social activities at school”; (2) physical environment of the school and classroom (11 items), which included items such as “My school is well kept” and “The chairs and tables are comfortable for me”; (3) negative feelings toward school (8 items), which included items such as “I feel lonely” or “I would like to transfer to another school”; and (4) positive feelings toward school (5 items), such as “I have friends in school” and “I am satisfied with my grades.” Each item was scored on a 4-point scale, as described earlier. We reverse-scored the negative feelings category items—namely, the higher the score, the fewer negative feelings were experienced. In addition, to guard against response bias, we phrased eight of the items in a negative manner, and consequently the scoring for these items was also reversed. Questionnaire items were arranged in a random order to prevent a cluster of items relating to the same topic. We computed a mean score ranging from 1 to 4 for each of the categories and for the total score.

**Data Analysis**

We used the following procedures to examine the construct validity of the final version of the QoLS. Internal consistency was examined by using both Cronbach’s α and Pearson correlations to determine the correlations among the different QoLS categories and between them and the total score. Next, we used a two-way (Gender × Age Group) multivariate analysis of variance to examine the differences between age groups and between genders in the various QoLS categories.

**Results**

We again applied Cronbach’s α analysis in relation to the final version of the QoLS. Results were as follows: teacher–student relationship and school activities, α = .91; physical environment, α = .82; negative feelings, α = .90; and positive feelings, α = .68. The internal consistency of the Total questionnaire scores was .88. Next, we examined the correlation among the different factors and between them and the Total QoLS score using Pearson correlations (see Table 2). Results indicated that the Total QoLS score had a significant medium to high correlation with each of the questionnaire categories (.51 < r < .69). In other words, each of the categories appears to be related to the construct of quality of school life. Furthermore, the physical environment category was significantly related to each of the other categories, with a low to medium correlation.

Using multivariate analysis of variance, we examined students’ perception of their school QOL to determine whether gender and grade differences existed. Analyses indicated that there were no gender differences. By contrast, as can be seen in Table 3, differences between grade levels were found in all categories with one exception—positive feelings toward school. Post hoc analysis using Scheffé tests indicated that students in third grade perceived their school QOL to be significantly better than did students in fourth through sixth grades (.00 < p < .01, for each of the categories and the Total score).

**Table 2. Correlations Among Quality of Life in School (QoLS) Questionnaire Categories and Total Score**

<table>
<thead>
<tr>
<th>Category</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total QoLS</td>
<td>—</td>
<td>.69**</td>
<td>.61**</td>
<td>.51**</td>
<td>.62**</td>
</tr>
<tr>
<td>2. Relationship&lt;sup&gt;a&lt;/sup&gt;</td>
<td>—</td>
<td>.71**</td>
<td>-.10</td>
<td>.34**</td>
<td></td>
</tr>
<tr>
<td>3. Physical environment</td>
<td>—</td>
<td>-.23*</td>
<td>.35**</td>
<td></td>
<td>.06</td>
</tr>
<tr>
<td>4. Negative feelings</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Positive feelings</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. N = 353.*

<sup>a</sup>Teacher–student relationship and school activities.

<sup>*</sup>p < .05. <sup>**</sup>p < .01.
Discussion

The promotion of students’ well-being and school QOL is one of the major current challenges facing educational and health teams (WHO, 2007). To date, however, few measures evaluate students’ perceptions of QOL at school. This article described the development of the QoLS questionnaire (Weintraub & Bar-Haim Erez, 2007) as a measure for elementary school students and the process for establishing its construct validity.

The QoLS has evolved through four phases in which the questionnaire’s items were devised and its validity examined. The final version of the QoLS includes 36 items representing four factors measuring the construct of school QOL: teacher–student relationship and school activities, physical environment, negative feelings, and positive feelings. The structure of the QoLS questionnaire is congruent with the theoretical and research literature (e.g., Schalock, 2004; Ziviani et al., 2006), further establishing that school QOL is a multidimensional construct that includes a variety of factors. In addition, these factors together delineate the construct of school QOL as relating to students’ well-being and satisfaction from the point of view of their positive and negative experiences in activities typical of school (Malin & Linnakyla, 2001). Moreover, this study’s analysis indicated that the four QoLS factors together explained 50.9% of the variance.

One of the unique features of the QoLS questionnaire is that it addresses the physical environment as an important factor relating to school QOL. Analysis indicated that this factor is, in fact, a separate and important factor contributing to the construct of school QOL. These findings support the evidence that the school’s physical environment may influence students’ well-being (Konu & Rimpela, 2002; Weinstein, 1979; Ziviani & Muhlenhaupt, 2006). Therefore, it appears that when measuring students’ perception of their QOL at school, it is essential to examine the physical environment along with other aspects related to school.

Next, we examined the questionnaire’s internal consistency. We found that the items in each of the factors highly correlated with each other. Most of the factors had a low to moderate significant correlation with each other and with the total score. It is not clear why we found a negative correlation between the categories of negative feelings and physical environment as well as teacher–student relationship, indicating that the worst students felt about themselves and about school, the better they perceived the physical environment and their relationship with their teachers to be. Yet, these correlations were very low and need to be further examined. However, as with the other categories, we did find a moderate positive correlation between the negative feeling category and the total QoLS score. These results indicate that each of the QoLS factors contributes to the measurement of the QOL construct at school and, as stated earlier, supports the results of previous studies (e.g., Konu & Rimpela, 2002; Malin & Linnakyla, 2001; Mok & Flynn, 2002).

The QoLS’s validity was further established by examining gender differences and developmental trends (i.e., grade differences) with respect to students’ perceptions of their QOL. Commensurate with the results of most of the studies in this area (e.g., Gilman & Huebner, 2006; Mok & Flynn, 2002; Ng et al., 2005), our results showed no gender differences in students’ perceptions of their school QOL. These results contrast with those of Mok and Flynn (2002), who found that girls in secondary school perceived their school QOL to be better than did boys. These studies’ differing results might be explained by age differences in the studies.

Our results did indicate grade differences in students’ perception of school QOL. Specifically, students in third grade perceived their QOL to be better than did students in fourth through sixth grades. These results support the findings of previous studies showing developmental trends in children’s perception of their QOL (e.g., Gilman & Huebner, 2006; Ng et al., 2005; Park, 2005). Therefore, it appears that the QoLS questionnaire is sufficiently sensitive to show age differences in students’ perceptions of their school QOL. One may wonder why third-grade students were different from their older peers. Perhaps third-grade students’ mental or cognitive developmental level is more
similar to that of their younger peers than that of their older peers. Support for this notion can be found in different measures of QOL that have separate norms or forms for students ages 8 or younger (i.e., third grade and lower) and for older students (e.g., Child Health Questionnaire, Landgraf, Abetz, & Ware, 1999; Pediatric Quality of Life Inventory, Varni, 2005].

Limitations and Future Research
The process of validating the QoLS had several limitations. First, although we included a relatively adequate sample size, we did not have available data regarding the students’ achievement and family background. Assuming that school QOL may also be influenced by these factors, further studies should include such data. In addition, we validated the QoLS among Hebrew-speaking children in Israel. We are in the process of validating this measure among Arabic-speaking children and comparing their perceived QOL with that of Hebrew-speaking children.

Moreover, this study included only students with no known disability. To attain a wider perspective on students’ perception of QOL, further studies should include students with various types of disability. The data analysis of such a study is in its final stages (Weintraub, Reiss, Saban, Levy, & Bar-Haim Erez, 2009). Including this student population and comparing their perceptions of school QOL with those of students with no known disability could further confirm the QoLS’s discriminant validity. Finally, because QOL may be influenced by cultural background, we recommend carrying out cross-cultural studies to compare students’ perceptions and further establish the QoLS’s validity.

Summary
This article described the development and validation of the QoLS. The results of our study support the QoLS’s construct validity. Thus, it appears that the QoLS may assist clinicians and education teams in evaluating students’ perceptions of their QOL at school from a multidimensional perspective. Moreover, this study emphasized the importance of including aspects of the schools’ physical environment when evaluating school QOL. The data gathered by means of the QoLS may serve as the basis for developing prevention and intervention programs that may enhance students’ QOL and well-being at school. ▲

Acknowledgments
We thank the occupational therapists who participated in data collection: Inbal Baruch-Dinari, Odelia Reiss, Gili Levy, and Ettie Saban. We also thank the principals, teachers, and students in the different school for their cooperation and for sharing their thoughts and feelings. This study was partially funded by the Israeli Society of Occupational Therapy.

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