

## *Original Paper*

# Attaining Children's Development through Appropriate Assessment Practices: Insights from Kindergarten Teachers

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### **Abstract**

*The research contributes to the conversation regarding kindergarten teachers' knowledge about developmentally appropriate assessments practices in attaining curriculum goals of selected kindergartens classrooms within the Ghanaian settings. The mixed method research approach was employed. Quantitative data were gathered from 1,413 teachers using questionnaires, while qualitative data were collected from 10 participants who were interviewed and observed. The participants for the quantitative research were randomly selected from ten districts in the Central Region of Ghana. The data were analysed using both descriptive and inferential statistics. However, the participants for the qualitative research were purposely sampled. The qualitative data were analysed through open and axial coding. The study revealed that KG teachers were achieving curriculum goals and were using developmentally appropriate assessment procedures. They were however, not conversant with some of the curriculum goals and emerging assessment practices. It was also evident that there is a positive relationship between KG teachers' achievement of the goals and the use of assessment procedures. It was recommended among others that through orientation and training sessions, KG teachers should be given insights into KG curriculum goals and diverse authentic assessment procedures to enhance and promote children's development in varied ways.*

### **Keywords**

*early, childhood, curriculum goals, assessment, kindergarten*

## 1. Introduction

A significant element that is closely linked to high-quality education in early childhood settings is having teachers who have insights into assessment practices that are in sync with the nature of children and how they learn which in turn, help in achieving set curriculum goals (Bredekamp, 2014; Zaslow, Tout, Halle, Whittaker, & Lovelle, 2010). Teacher's insights regarding diverse assessment practices that are apt in early childhood settings and how to use each of them appropriately in any teaching and learning context is likely to determine the experiences that individual children have gained in any teaching and learning encounter (Bagnato & Ye-Ho, 2006). This presupposes that early childhood teachers who have in-depth knowledge and experiences regarding how to apply these assessments procedures tend not only unearth learning difficulties of children but are able to apply remedial measures in dealing with the situation. This is not surprising because assessment practices give the teachers insights into the developmental needs and the uniqueness that each child brings to the learning context and how each of them can be helped to develop along their natural endowment paths.

In spite of this, research findings suggest that there is continuously a tension between teachers' knowledge about assessment practices and actual practices in early childhood settings (Stipek & Byler, 1997; Abroanpah, 2008). Several research findings point to teachers' knowledge of curriculum goals and its attendant assessment practices but at times, apply traditional assessment practices (Abroanpah, 2008; Elicker & McMullen, 2012). One possible explanation to the disconnect is that some kindergarten teachers might not have in-depth knowledge and experiences regarding how to assess children's development under certain learning contexts such as play-based learning activities. Moreover, officials from the inspectorate division in a centralised and controlled educational system, tend to obstruct implementation of emerging assessment practices in early childhood settings. This is not surprising because they are not abreast with modern trends regarding assessment practices in early childhood settings and the significance therein (Carolyn & Jane, 2014).

Teachers' effectiveness, in assessing children's learning outcomes are largely influenced by their knowledge and understanding of each of the curriculum goals and the assessment procedures closely linked to each of them. More significantly, experiences teachers gain from years of assessing children tend to give them insights into effective use of assessment instruments to ascertain the developmental level and needs of individual children which in turn, give them insights regarding a fitting remedial measure in dealing with certain developmental challenges of children (Stipek, 2004).

Previous research findings suggest that Ghanaian early childhood teachers often use assessment practices that are not developmentally appropriate, even though they have the theoretical understanding and experiences regarding the use of authentic assessment practices in early childhood settings (Hamilton, 2014). Further study is required to fully gain understanding regarding the relationship between teachers' knowledge and their assessment practices. Having insights into the connection among these factors is likely to inform how teacher preparation programmes in other socio-cultural contexts can be adopted and adapted within the Ghanaian settings to develop assessment skills of early

childhood teachers.

The main thrust of this study is to determine how teachers put their knowledge about assessment into practice. Precisely, the study sought to understand whether teachers' theoretical knowledge about assessment is linked to the quality of assessment practices that they are expected to use in determining children's learning outcomes.

Having insights into the connection between teachers' knowledge and assessment practices is likely to reveal children's level of development, needs, interests and the uniqueness that each of them brings to the teaching and learning context which in turn, informs effective planning in kindergarten setting. In this article the focus is to establish whether increased knowledge in assessment practices can improve teachers' ability in achieving the curriculum goals which invariably, tend to influence children's development in diverse ways.

The research questions driving the study include the following:

- 1) How are KG teachers achieving curriculum goals?
- 2) How do KG teachers assess pupils?

It was also hypothesized that:

- There is no significant relationship between how KG teachers are achieving curriculum goals and their assessment practices.

## 2. Literature Review

### 2.1 Authentic Assessment Practices in Early Childhood Settings

The assessment procedures underscored by Piaget's cognitive constructivist theory of learning is referred as authentic assessment. Dennis, Reuter and Simpson (2013) argue that authentic assessment which is also referred as play-based, naturalistic or performance based is a process of gathering information by kindergarten teachers who are well-informed about the behaviour and capabilities of young children as they unfold in kindergarten classroom settings. Evidence gathered from authentic assessment tends to underscore the strength and weakness that each child brings to any learning context. This not surprising because, it gives teachers insights into how young children put into practice their knowledge and skills in real life classroom context. Examples of authentic assessment instruments are as follows.

### 2.2 Interview

Interview is one of the major assessment instruments of authentic assessment. This assessment instrument is very useful because it tends to highlight the capabilities of young children across a wide spectrum of learning contexts. Authentic assessment along the lines of observation is a collaborative affair between the teacher and the parents of individual children as well those who are well-informed about how young children learn. This is significant, because the kindergarten teacher needs information from diverse sources such as teaching assistants, other teachers and parents regarding individual children before the level of development of each of them can be ascertain (Banks, 2000).

### 2.3 Observation

Observation is another assessment instrument for obtaining information about the growth and development of individual children in kindergarten classroom settings (Dennis, Reuter, & Simpson, 2013). During observation, the preoccupation of the kindergarten teacher is to lookout for certain capabilities that a child demonstrates while engaging in learning activities (Neisworth & Bagnato, 2004). The data that emanate from observation form key component of authentic assessment procedures for gathering information about the level of development of individual children. Assessment instruments which fall under observation include running and anecdotal records, Antecedent, Behaviour and Consequence (ABC), analysis and permanent products or portfolios (Dennis, Reiter, & Simpson, 2013). However, the question that arises is the significance of each of these observation assessment procedures in determining children's development. Each of them is significant in diverse ways and is illustrated as follows:

### 2.4 Running Records

Running records is an observation mechanism which has the capacity to establish the sequence of events that happen over a period of time in a classroom setting. This not surprising because it provides details about the behaviour of young children over a period of time. Nevertheless, to maximize, its potentials, the teacher has to be as objective as much as possible so that the real behaviours of children that unfold during the observation can be captured instead the teacher's judgement of what might have happened. Kindergarten teachers are expected to include the following information; date and time of the information, names of children involved, location of the episode and what individual said (Dennis, 2002).

### 2.5 Anecdotal Records

Anecdotal records provide room for the kindergarten teacher to focus on a particular behaviour of individual children over a period of time for the purpose of fashioning out effective mechanism for determining level of development of children in a group context and on individual basis as well (Dennis, Reiter, & Simpson, 2013).

### 2.6 ABC Analysis

The ABC analysis is an observation procedure which aims at recording the behaviour of child by first establishing what triggered off the behaviour as well as what happened after the behaviour was sparked off. These factors help kindergarten teachers to establish reasons individual children behave in a particular way (Clay, 2000).

### 2.7 Permanent Products or Portfolios

Portfolio assessment might consist of samples of a child's work, photos, graphics or audiotapes. These products are incorporated into a file for the purpose of gathering information about certain works that the child has done over a period of time. The purpose of portfolio assessment is to monitor the progress of the child over a period (Gullo, 2007).

In short, a blend of these data collection procedures is likely to give kindergarten teachers insights into the uniqueness that individual children bring into the kindergarten classroom context. This information would then serve as a compass to enable the teacher to effectively plan the curriculum which in turn, help young children harnesses their individual potentials.

### **3. Method**

#### *3.1 Participants*

The study was conducted in Central Region, one of the regions in Ghana. The mixed method research design (survey, phenomenology) was used in this study. For the sample of the quantitative study to be representative, all the districts were selected. A stratified sample of 1,413 participants were randomly selected from the districts to participate in the study. The participants of the qualitative approach comprised 5 participants who were purposively sampled. The names of the participants in this study are not real but pseudonyms. The teachers who participated in the qualitative study have taught in various schools ranging from 9 to 10 years. They included: comfort, Amina, Kate, Cecelia, and Serwaah. A phenomenological qualitative study approach was used in this study (Creswell, 2012). By using phenomenology research approach, insights were gain regarding teachers' assessment practices in early childhood settings and how children's development unfolds.

#### *3.2 Instruments*

Four main research instruments used in this study include questionnaire, interview, documentary analysis and observations. For the quantitative research, the teachers were required to complete a questionnaire consisted of demographic information of the respondents (age, teaching experiences, educational background). The second part covers the analyses and interpretation of data elicited from KG on how they are achieving curriculum goals. The following keys have been used to represent the scales in the tables below; NA-not at all, PL-poorly, FW-fairly well, and VW-very well. Data were interpreted using means and the following mean ranges: NA 1.00-1.49; PL 1.50-2.49; FW 2.50-3.49; VW 3.50-4.00. The questionnaire was a four-point Likert-type scale which was coded 4-very well; 3-fairly well; 2-poorly and 1-not at all. It was pretested using 30 KG teachers in Western Region. The content validity and reliability of the instruments were determined through expert review of items and the use of the Cronbach Coefficient alpha which generated alphas of .890 for items on kindergarten curriculum goals achievement and .843 for use of assessment procedures respectively.

For the qualitative study, a semi-structured interviews, observations and documentary analysis were used to have nuanced understanding of participants views regarding curriculum goals that define the early childhood curriculum and the assessment practices linked to each of them. The participants were interviewed and observed thrice on separate occasions. Moreover, information was tease out from documents that were relevant to the study. The semi-structured individual interviews and the observations lasted 45 minutes for each of the three sessions.

### 3.3 Procedure

The instruments were administered to the participants from July 2017 to December 2017. The data regarding the curriculum goals and teachers' assessment were analysed using descriptive statistics (mean, standard deviation) while the Pearson Product Moment Correlation was used to analyse the hypothesis. In the case of the data regarding the qualitative research, teachers' thoughts were audio recorded and transcribed verbatim. The teachers' thoughts were further organised into categories. The themes that emerged from the analyses were further validated by the observational data linked to individual teachers use of diverse authentic assessment practices in their classrooms. In short, the themes were determined through open and axial coding (Boeijie, 2010). From the analyses above, it can be concluded that a theme is a pattern across data sets that is important to the description of a phenomenon which is linked to a research question.

### 3.4 Findings

In the ensuing section, the first present the descriptive statistics regarding the achievement of curriculum goals, assessment procedures as well as the link between assessment procedures and curriculum goals are presented. The inferential statistics which establishes the nuances regarding the relationship between assessment curriculum goals would be unearthed.

### 3.5 Kindergarten Teachers Achievement of KG Curriculum Goals

This part covers the analyses and interpretation of data elicited from KG on how they are achieving curriculum goals. The following keys have been used to represent the scales in the tables below; NA-not at all, PL-poorly, FW-fairly well, and VW-very well. Data were interpreted using means and the following mean ranges: NA 1.00-1.49; PL 1.50-2.49; FW 2.50-3.49; VW 3.50-4.00.

**Table 1. KG Teachers Achievement of Curriculum Goals**

Statement	Mean	SD
Enabling pupils develop listening skills	3.65	.53
Enabling pupils develop speaking skills	3.62	.52
Enabling pupils develop reading skills	3.51	.58
Enabling pupils develop writing skills	3.62	.56
Getting pupils to familiarize themselves with the environment	3.57	.57
Enabling pupils live a healthy life	3.41	.61
Developing pupil's ability to interact and socialize with peers and others	3.49	.58
Helping pupils to relate positively with people	3.46	.50
Awakening and developing the creative abilities of	3.36	.63

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pupils		
Helping pupils to acquire and interpret information	3.29	.63
Getting pupils to appreciate and find pleasure in their own creations and those of others	3.36	.64
Facilitating experiences to lay foundation for further learning in the formal school system	3.34	.62

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Table 2 shows the descriptive statistics of kindergarten teachers knowledge and understanding of the curriculum goals. Overall, most of the teachers have insights about the goals and are helping in developing diverse skills of children and this is supported by a mean of 3.65. It was followed closely by their ability to enable pupils develop both speaking skills and writing skills both of which yielded means of 3.62. These three elements are termed as fundamental literacy skills because they play significant roles in children's language development. Teachers again reacted favorably to the issue of helping pupils to familiarize themselves within the world around them, with a mean of 3.57. Though, a mean of 3.29 signified that teachers are helping pupils to acquire and interpret information fairly well, it was considered the least of the goals they are achieving. Largely, the responses of the teachers suggest that they are achieving the goals of the kindergarten curriculum fairly well which is implied by the cumulative mean of 3.47.

The qualitative data obtained through observations and documentary analysis revealed that the teachers' lesson objectives were clearly define and were closely linked to the curriculum goals of the early childhood curriculum. This is illustrated in the following excerpts:

Objectives by Kate: *By the end of the lesson, the pupil will be able to:*

- i. *Count numbers from 1 to 10.*
- ii. *Assign numerals to number names.*

Objective by Amina: *By the end of the lesson, the child will be able to:*

- i. *Associate upper and lower-case alphabet (A-J) in a matching activity.*

Objective by Cecilia: *By the end of the lesson, pupils will be able to:*

- i. *Identify at least four (4) sources of light.*
- ii. *Mention the uses of light.*

Even though, the objectives where clearly stated some were not specific in terms of the number of activities learners were expected to carry out or standard set to determine whether they have learnt as expected in objective (ii) for Kate and Cecilia. It was further discovered that teachers who stated such objectives copied directly from the kindergarten syllabus. Moreover, some teachers could not get pupils to exhibit all the outcomes stated due to the large class sizes which is a common phenomenon in most public schools in the study context. However, a mere statement of objectives does not translate to the achievement of curriculum goals because effective teaching is largely influenced by multiplicity of factors.

However, the interview data further provided insights into how the participants were achieving the curriculum goals. The teachers provided varying explanations to that effect;

*Amina: I have not looked at the goals. I only look at the specific Objectives provided for each subtopic to be taught. The specific objectives Give you a very clear understanding of what you are supposed to do.*

*Cecilia: Looking at the goals at first sight they look broad but later They become clearer. If you take your time to look at the specific objectives You will see that you are achieving the goals.*

*Joana: Infact for the goals, I have not taken time to look at them, But the objectives for the various activities are clearer.*

The responses suggest that most of the teachers had not taken time to read and understand the kindergarten curriculum goals. It appears most of them got to know the goals through the questionnaire, though, the goals are stated on the very first page of the curriculum. This suggests that there appear to be flaws regarding the teacher preparations programmes and in-service training. This is significant because it highlights one weakness about the teacher education programmes and the need for a remedial action by the powers that be.

The follow-up question sought to find out how teachers could assist learners achieve intended learning outcomes. All the teachers believed that they could assist learners exhibit outcomes stated in the goals and objectives. This seems to be consistent with their responses to items in the questionnaire. However, Kate made one striking observation about the hindrance pertaining to the implementation of authentic assessment in kindergarten settings:

*... my problem is that because of the pressure from circuit supervisors it becomes very difficult to find out whether children are achieving them (goals) or not. Since they only come around to count exercises showing that you are working. They forget that it's not all the things the children can do for you to see in class.*

This extract is every revealing because even though, the participant has in-depth knowledge and understanding about assessment practices which are developmentally appropriate for assessing different learning outcomes of children but is constrained by the assessment preferences of officialdom.

**Table 2. KG Teachers' Use of Assessment Procedures**

Assessment Procedures	Mean	SD
Pupils' opinion of themselves and their work	3.12	.77
Conversing with pupils	3.37	.72
Observation of pupils	3.44	.66
Interacting very closely with pupils	3.35	.74
Setting tasks for pupils	3.21	.72



Using pupils' appreciation of each other's work	3.24	.74
Using checklist	2.80	.95
Using anecdotal records	2.31	.90
Using rating scales	2.46	.86
Using tests/exercises	3.22	.71

Table 3 reveals diverse assessment procedures used by the teachers. The use of observation generated the highest mean of 3.44 which suggest that it was a major tool used by the teachers to assess children's learning outcomes. Moreover, conversation with individual children also played significant roles in assessing the children's learning outcomes (3.44). Yet, anecdotal records were the least used. This is significant because it gives insights regarding the teachers' lack of competencies in using other assessment practices such as anecdotal records (2.1) which also have something to offer with respect to different developmental trajectory of children.

**Table 3. Relationship between Use of Assessment Procedures and Curriculum Goal Achievement**

Variables	Total goal achievement	Total assessment
KG curriculum goals Pearson correlation	1	.433
Sig (2-tailed)		.000
N	1413	1413
Use of assessment procedures Pearson correlation	.433	1
Sig (2-tailed)	.000	
N	1413	1413

The relationship between kindergarten teachers' achievement of curriculum goals and use of assessment procedures was explored using Pearsons Product Moment correlation coefficient as shown in Table 4. The study's finding revealed a positive correlation between the two variables ( $r=.433$ ,  $n=1413$ ,  $p<.0005$ ). However, the relationship was moderate, so the null hypothesis was thus rejected. The study's finding suggests that the teachers used appropriate assessment procedures which in turn, impacted children's development. This is not surprising because assessment practices partly contribute to achievement of curriculum goals and objectives in in any teaching and learning context. Nevertheless, these elements form just a few of the key determinants of effective teaching and learning in early childhood settings, so there is an incomplete picture regarding how other developmentally appropriate assessment practices influence children's development (Kubiszyn & Borich, 2000).

#### 4. Discussion

It can be discerned from both the quantitative and qualitative data that though, all the respondents indicated that they have insights into the curriculum goals which in turn, helped them use developmentally appropriate assessment practices in determining diverse developmental trajectory of

children, yet, there appears to be an inherent weakness linked to their assessment practices too. This is significant because the essence of kindergarten education is to promote the holistic development of children (cognitive, social, emotional, physical, spiritual, moral) through appropriate use of diverse assessment practices. Moreover, the support of officialdom is also, required before it can become a reality. Nevertheless, the question that arises is whether the officials from the inspectorate division have insights regarding the essence of kindergarten education. The evidence from the study's finding points to the contrary, because if they do, they would not insist on using only tests scores of children in determining the level of development that each of them had attained. The competencies of the officials appear to be suspect because there is more to early childhood education than mere tests scores. The government and other stakeholders have roles to play if the curriculum goals are to be effectively implemented. This is not surprising because it takes an early teacher and the support of officials who have in-depth understanding of the curriculum goals before learning activities which takes into account the needs, interests, and individuality of children can be planned in early childhood settings. However, it appears the teachers are constrained by the insistence of test scores by officials from the inspectorate division. This is significant because it gives us insights into the caliber of officials manning the inspectorate division because officials with in-depth knowledge and understanding regarding the nature of children and how they learn would not largely be concern about tests scores. However, this might not be a complete picture of the puzzle because the kindergarten curriculum is controlled and centralized and emphasis is placed on accountability issues by the political dynamics of the times and officialdom from inspectorate division (MoE, 2012). However, there is the need for a paradigm shift in assessment practices if the study's finding which suggest that the teachers have insights about developmentally appropriate assessment practices is to become a reality. In this vein, the officials at the inspectorate division need to be given insights regarding, the differences with respect to children's developmental needs and how the one-size-fit-all approach to assessment practices is likely to have a detrimental effect on children's development because it focuses only the cognitive aspect alone. Yet, the cognitive domain is not the only way of measuring a child's intelligence because intelligence of children manifests in multiple ways (Gardener, 2009). This not surprising, because a clear understanding of the goals has positive implications for assessment practices in kindergarten sittings (Pyle & Deluca, 2017). Early childhood teachers should be given the leeway by the powers that be to implement assessment practices that are in tune with the dictates of global trends in early years education.

#### *4.1 Implications for Practice*

The study's findings have significant implications for early childhood education in Ghana. There is the need for officials of the district directorate of education to be given insights into modern trends regarding developmentally appropriate assessment practices in kindergarten classrooms to prevent a situation where tests scores become standard measures of children's trajectory of development. This is significant because they would be reoriented to understand that the essence of kindergarten education,

is to harness and develop children's potentials, which is often not closely-linked to only the cognitive aspect of learning because intelligence can be expressed in multiple ways.

## 5. Conclusion

It can be discerned from the study's findings that in an apparent uniformity regarding assessment practices in early childhood settings, there is bound to be diversity. This not surprising because each of participant's assessment practices was largely informed by an identity that has evolved over the years through their teacher preparation years and experiences gained during their professional practices which in turn, give them insights into diverse assessment practices that suite the socio-cultural contexts of their children. This is significant because the philosophical underpinning of the 2007 curriculum reforms in Ghana is to provide effective teacher-child interactions that would impact the holistic development of children which is determined through developmentally assessment practices. The study's findings contribute to the growing body of knowledge which suggests that children's development can best be measured through assessment practices which are in sync with the nature of children and how they learn. Nonetheless, the significance of the current assessment practice can only be realised if officials from the inspectorate division of Ghana Education are well-informed about emerging theories and assessment practices in early childhood settings across the globe.

## References

- Boeije, H. (2010). *Analyses in qualitative research*. Los Angeles: Sage Publications Bredekamp.
- Bredekamp, S. (2014). *Effective practices in early childhood Educating: Building a foundation*. New Jersey: Pearson Education Inc.
- Carolyn, J. G., & Jane, B. K. (2014). Practice what we preach: Differentiating instruction and assessment in higher education's classrooms as a model of effective pedagogy for early childhood teacher education candidates. *Journal of Early Childhood Teacher Education*, 359(1), 98-109.
- Clay, M. (2000). *Running records for classroom teachers*. Portsmouth, NH: Heinemann.
- Creswell, J. W. (2012). *Educational research. Planning, conducting and evaluating Developing Country Studies*, 5(8), 110-128.
- Dennis, L. (2002). Authentic assessment procedures in kindergarten classrooms. *Journal of Early Education*, 20, 261-270.
- Dennis, L. R., Rueter, J. A., & Simpson, C. G. (2013). Authentic assessment: Establishing a clear foundation. *Preventing School Failure*, 57(4), 189-195.  
<https://doi.org/10.1080/1045988X.2012.681715>
- Gardner, H. (1993). *Multiple Intelligences the Theory in Practice*. New York: Basic Books.
- Ghana Education Service (GES). (2012). *KG pupil assessment tools*. Accra: Adwinsah Publications.
- Gullo, D. F. (2006). *Alternative means of assisting children's learning in early childhood classrooms*. In B. Spodek, & O. N. Saracho (Eds.), *Handbook of research on the education of young children*

- (2nd ed., pp. 343-445). Mahwah, NJ: Erlbaum.
- Harlen, W. (2012). On the relationship between assessment for formative and summative improve school preparation and performance? In *NBER Working Paper 10452*. National Bureau of Economic Research Jovanovich Publishers.
- Kubiszyn, T., & Borich, G. (2000). *Educational testing and measurement: Classroom learning in the kindergarten year* (pp. 11-25). Washington, DC: NAEYC.
- McMullen, M., Elicker, J., Wang, J., Erdiller, Z., Lee, S. M., & Lin, C. H. (2005). Comparing beliefs about appropriate practice among early childhood education. And care professionals from the U.S., China, Taiwan, Korea and Turkey. *Early Childhood Research Quarterly*, 20, 451-564. <https://doi.org/10.1016/j.ecresq.2005.10.005>
- Pyle, A., & Deluca, C. (2017). Assessment in play-based pedagogy: An empirical study of teachers' perspectives and practices. *Journal of Educational Practice*, 11(5), 457-466.
- Sandilos, L. E., & Diperna, L. C. (2014). Measuring quality in Kindergarten classrooms: Structural analyses of the classroom assessment system. *Early Education Development*, 25(4), 984-914.
- Stipek, D. J. (2004). Teaching practices in kindergarten and first grade: Different strokes for different folks. *Early Childhood Research Quarterly*, 19, 548-568. <https://doi.org/10.1016/j.ecresq.2004.10.010>
- Stipek, D. J., & Byler, P. (1997). Early childhood education teachers: Do they practice what they preach? *Early Childhood Research Quarterly*, 12, 305-325. [https://doi.org/10.1016/S0885-2006\(97\)90005-3](https://doi.org/10.1016/S0885-2006(97)90005-3)
- Stipek, D. J., & Byler, P. (2004). The early childhood classroom observation measure. Teachers' pedagogical content knowledge in teaching psychosocial skills across the kindergarten curriculum in Ghana. *Asia Pacific Journal of Research in Early Childhood Education*, 10(1), 67-86. <https://doi.org/10.1016/j.ecresq.2004.07.007>
- Williams, L. R. (1996). Does practice lead theory? Teachers' constructs about teaching: Bottom-up perspectives. In J. A. Chafel, & S. Reifel (Eds.), *Advances in early education and day Care: Theory and practice in early childhood teaching* (Vol. 8, p. 153-184). UK: Emerald Group Publishing Limited.
- Zaslow, M., Tout, K., Halle, T., Whittaker, J., & Lavelle, B. (2010). *Toward the identification of features of effective professional development for early childhood educators: Literature review*. Washington, DC: U.S. Department of Education, Office of Planning, Evaluation, and Social Development.