



Teachers' perspectives on the Assessment of Student Engagement - Methods and Tools Applied in Preschool Settings.

Dr. Maria Sakellariou¹ Efthymia Tsiara²

¹ Professor, School of Pedagogical Sciences, Department of Early Childhood Education, University of Ioannina, Greece

² Kindergarten teacher, M.Edu. PhD Student University of Ioannina, Greece

Abstract. This paper explores assessment of student engagement which is considered to be one of the biggest challenges facing the research community and the contemporary teacher. Research on student engagement describes strengths and limitations of different methods for assessing student engagement (i.e. observations). Frustration occurs, however, if teachers use a systematic approach to measure current student engagement, and accordingly set learning goals and design the learning process. Despite the growing research focus on survey measures of student engagement that have been used in prior research, there is a notable gap in teachers' perceptions on the assessment of student engagement. Through one to one, semi-structured interviews, we investigate 80 Greek teachers' perspectives on methods and tools applied during regular class instruction in preschool settings. The interviews are developed based on Creswell's (2008) interview model, with a mixture of open-ended and close-ended questions. Based on qualitative and quantitative data analysis, we present teachers perspectives regarding assessing methods they apply in their class in order to assess preschoolers' engagement and if they consider significant to use each method. The participants also identify that observations are the most frequently used assessing method, data of which however isn't systematically used to measure current student engagement and consequently defining academic success.

Keywords: teachers' perspectives; semi-structured interviews; assessment of student engagement; assessing methods and tools; qualitative and quantitative data analysis.

1 Introduction: Engagement in Learning Process

According to the International Center for Leadership in Education, student engagement is a learning objective for the 21st century. Research shows a significant correlation between high levels of engagement and achievement



(DiPema, Lei, & Reid, 2007). At the same time, children engagement –even in kindergarten- has been recognized as a reliable predictor of school completion (Ling & Barnett, 2013; Skinner & Pitzer 2012; Ladd & Dinella, 2009) and an indicator to understanding and preventing high dropout rates (; Hart; Stewart, & Jimerson, 2011; Fredericks, Blumenfeld, & Paris, 2004). Research data shows that students with low engagement levels can not only demonstrate indifference to the learning process or disruptive behavior and poor performance, but also truancy or dropout (Ling & Barnett, 2013; Abbott-Chapman, 2011; Hart, Stewart, & Jimerson, 2011); school completion is crucially depended on how students are involved in the educational process.

Despite its advantages in the learning process, the concept of student engagement remains vague (Appleton et. al, 2008). Many researchers recognize that they face difficulties to define its key- features (Skinner, 2016; Findlay, 2013). For instance, researchers identify engagement as the willingness, the conscious effort that a student exerts as well as time on task (Chapman, 2003). Additionally, student engagement is a key construct in motivation theories. Motivational research in education (i.e Martin, Ginns, & Papworth 2017; Skinner & Pitzer, 2012 etc) demonstrates that engagement is more than the time on task; is the action, the activation that involves purpose and emotions. Engaged students do not simply spend time on learning activities, but they work diligently, being aware of the learning purpose and believing in the value of such an activation (Martin, et. al 2017; 2015). This activation is observable during the interaction of a student with the academic work. Trowler highlights that:

«Engagement is more than involvement, -it requires feelings and sense-making as well as activity. Acting without feeling engaged is just involvement or even compliance; feeling engaged without acting is dissociation » (Trowler, 2010 p.5).

Much of the research examining children’s school-based engagement uses Fredricks and colleagues’ (2004) conceptualization, which defines engagement as a multidimensional construct that consists of children’s capacity to interact with different aspects of the school environment including teacher, peers, and activities. This definition considers the child’s connection to the classroom environment behaviorally, cognitively and emotionally (Skinner, 2016; Fredricks et al., 2004; Skinner, Kinndermann, & Furrer, 2009). Thus, engagement can be conceived as a construct consisting of the interrelations among behavior, cognition, and emotion, which provides a more nuanced representation of the child in comparison to examining a single engagement component (Sakellariou, Tsiara and Gessiou, 2016; Appleton et al., 2008).



2 Assessing Student Engagement

The ambiguity in conceptual definition of student engagement is reflected in the choice of assessing methods and tools, as well. Research on student engagement depicts the large variation in the measurement of this construct, which has made it challenging to compare findings across studies. Researchers as Fredricks and McColskey, 2012; Hart & Jimerson, 2011; Jimerson, Campos & Greif (2003) compare and contrast survey measures of student engagement that have been used in prior research and describe strengths and limitations of different methods for assessing student engagement. These methods that are used at various research projects are observationsⁱ, self-report measures, experience sampling techniques, teacher ratings, and interviews (Fredricks and McColskey, 2012). Other tools used for measurement of the level of student engagement are administrative classroom walkthroughs, or peer reviews (Jones, 2008).

The growing research focus on assessment of student engagement, demonstrates that the large variation in the measurement of this construct is reflected in regular class, as well. Many schools are working diligently to improve student engagement. Frustration can occur, however, if schools embrace this goal without a systematic approach to measure current student engagement (Jones, 2008); if teachers face difficulty in measuring classroom engagement during regular class instruction; if teachers use a systematic approach to measure current student engagement, and accordingly set learning goals and design the learning process (McAfee & Leong, 2010).

Data on learner engagement as part of the Learning Criteria for 21st Century Learnersⁱⁱ is focused on results or school performance. However, it does not include measures about education processes and the student engagement during regular class instruction (Jones, 2008).

Besides, teachers' voices are rarely heard in the literature on student engagement (Parson and Taylor, 2011). There is a notable lack of qualitative and quantitative investigation into teachers' perceptions with regards to methods and tools applied during regular class instruction in preschool settings.

Taken into account the aforementioned, the present research project attempts to cover this specific research gap, investigating how the Greek teachers perceive assessment of student engagement. In particular, the purpose of this research is to present kindergarten teachers' perspectives with regard to assessing methods and tools applied during regular class instruction in preschool settings.

The reasons for choosing to investigate kindergarten teacher's perspectives are many and different. Firstly, the majority of the already existed research focuses substantially on the elementary and middle school years (Roorda, et al., 2011) where it has been repeatedly linked with children's academic success (DiPema, Lei, & Reid, 2007). Besides, it has been shown that children's early engagement indicates school readiness skills



(Williford et al.2013) and predicts later achievement, as well (Ling & Barnett, 2013; Skinner & Pitzer 2012; Ladd & Dinella, 2009). Although preschool environments can be critical to academic success and risk reduction (Vitiello, et.al, 2012), studies in preschool settings are limited (Curby, et al., 2014).

Taken into consideration those mentioned above, we consider interesting to investigate:

1. how preschool teachers perceive assessment of student engagement during regular class instruction and
2. which methods and tools they use to assess current student engagement in kindergarten class.

3 Data Collection Methods

Semi-structured interviews were selected as the type best suited to this project. The interviews were developed based on Creswell's interview model (2008) with a mixture of open-ended and close-ended questions allowing the researcher more flexibility to fully explore the interviewee's perspective (Fontana and Frey, 2000). The interviews incorporated six types of questions; background, knowledge, experience, opinion, feelings, sensory to gain a rounded perspective (Patton, 1990).

As the mode of inquiry, we used one-on-one interviews that were been conducted from September 2017 to May 2018. Each interview was lasting about 50'-60'.

The participants in this research were 80 teachers that work in preschool education units in Greece (prefecture of Ioannina and Larissa). Most of the participants work as general education teachers (85%), 27, 5% of whose serve as head teachers of the school unit. Besides, 84,75% of them have long teaching experience (more than 10 years). The great majority of the kindergarten teachers haven't advanced educational studies/ qualifications, since 28,75% and 7,5% of whose owns a Master or a doctoral degree.

4 Data Analysis Process

In the present research, we were conducting qualitative and quantitative data analysis processes. Creswell (2008) describes quantitative research as "seeking to measure", while qualitative research is best suited for research problems in which the variables are unknown and need exploring. According to Findlay (2013) a qualitative approach encompasses and values multiple perspectives and has suitable facets to access the knowledge embedded in the data.



Although there is no single approach to analyzing qualitative data, there are several guidelines for the analysis process. The most important and agreed upon guideline is that the process is inductive and iterative (Creswell, 2008; Findlay, 2013). The iterative nature is paramount to authenticity.

The data analysis was being made in situ, during each interview, where field notes were being taken. When an interview was over, another step in the analysis process was taken, that of post analysis. Post analysis was occurring during transcribing and memoing. We were converting audio recordings into text data, a process which was a time consuming, but crucial to memoing and coding. After transcribing, we were reading data over at least several times in order to begin developing a coding scheme, a process known as memoing. During this time, initial impressions (memos) were written in the margins of transcriptions, while also searching for recurring themes (Creswell, 2008). These two analysis processes in turn were leading to coding; the final step of data analysis. Coding was being made up of the following three steps; open coding, (developing the initial categories), axial coding (reconstructing the data in order to develop main categories and sub-categories) and selective coding (demonstrating links and connections in the categories)

5 Results

In an attempt to demonstrate teachers' perspectives regarding assessment of student engagement in preschool environments, in this paper we present relating open-ended and close-ended questions that have been used in 80 interviews and the corresponding teachers' responses that have been qualitatively and quantitatively analyzed (with the SPSS).

5.1 Teachers' Perspectives with Regards to the Applied Assessing Methods and Tools of Student Engagement in Preschool Environments (Open-Ended Question 191)

In the open-ended question 191 (*Which methods and tools do you use to assess student engagement in your class?*), teachers argue that they use a combination of assessing methods and tools. Their answers are categorized and presented at figure 1:

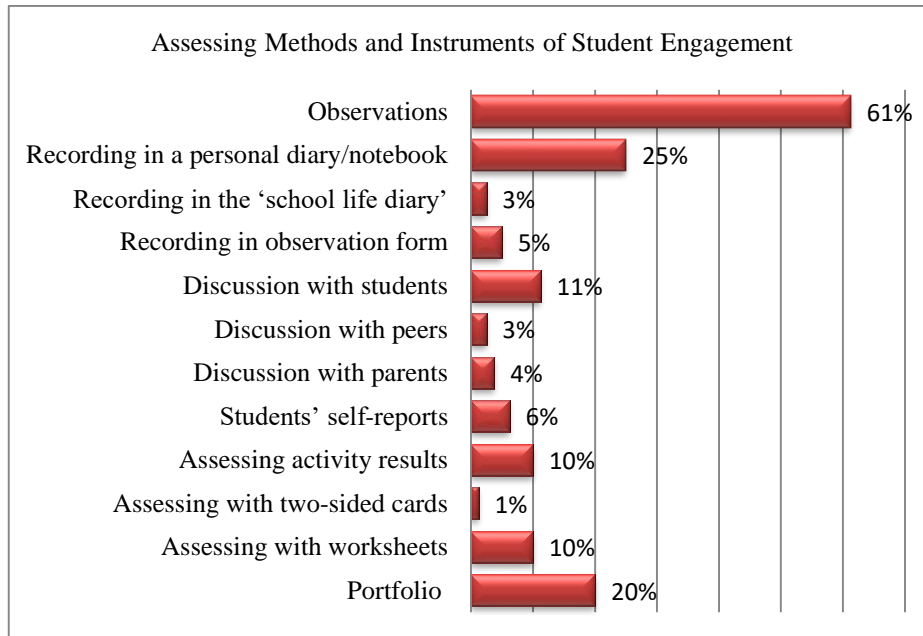


Figure 1: Teachers' perspectives with regards to the applied assessing methods and tools of student engagement

Observations. The overwhelming majority of teachers report that make use of informal observations as assessing method of students' engagement. (References in the interviews: 1, 2, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 22, 24, 25, 35, 37, 38, 39, 40, 42, 44, 45, 46, 48, 53, 54, 55, 57, 61, 64, 66, 68, 69, 79 / N = 49. The extracts from the following interviews are indicative:

"I use observation that is effective and continuous; it does not take time and effort" (Interview No1)
"Whether students are involved in the learning process is reflected in class climate". (Interview No2)
"I focus on specific behaviours; if children are interested in learning activities; if they take responsibilities and work collaboratively." (Interview No 66)

Recording in a personal diary / notebook. A large percentage of the interviewees (25%) admit to recording in personal diary or notebook data based on their informal observations of student engagement levels. (References in the interviews: 5, 10, 15, 16, 21, 22, 23, 28, 29, 30, 31, 32, 48, 49, 50, 52, 54/N=20

'Whatever attracts my attention is recorded in my diary; I usually record if children with learning difficulties or behavioral problems are engaged.'(Interview No28)



Recording in the 'school life diary'. A few kindergarten teachers (3%) refer that they record their remarks on student engagement in the official book of the school unit known as 'the school life diary'. (References in the interviews: 19, 51/ N = 2).

Recording in an observation form. According to the findings, only of 3% of participants admit to observing student engagement and recording data in observations forms. These interviewees are special education teachers that work in the context of Individualized Education Programs. Intending to fit the needs of each individual child with learning difficulties or special needs that have under their supervision, these teachers construct observations forms by themselves or adjust survey tools used in relative research projects. (References in the interviews: 3, 18, 33, 39 / N = 4).

Discussion with students. A satisfactory percentage of interviewees admit to involving preschoolers in discussion asking questions focused on student engagement. Thus, students have the chance of self-assessing with regards to their engagement in various activities. Usually, this self-assessment of student engagement takes place at the end of a project (i.e. during summative assessment) or in its intermediate breaks (i.e. during formative assessment).(References in the interviews:: 18, 23, 27, 34, 35, 36, 47, 58, 62/N= 9

"I use self-assessment; asking open-ended questions, I give each child the opportunity to participate". (Interview No 23)

Discussion with peers. In addition to the other assessing methods and tools of student engagement, discussion among teachers is also mentioned. Discussion helps teachers to exchange information and confirm what each one personally observes in class. (References in the interviews: 4, 51 / N = 2

"I exchange information with my colleagues, to confirm my remarks or share whatever frustrates me. This happens on a daily basis, especially for students with behavioral and learning problems. (Interview No4).

Discussion with parents. Even if discussion with parents may not appear to be an assessing method of student engagement, a few interviewees mentioned it (4%). Discussions with parents confirm what teachers personally assess using the other assessing methods. (References in the interviews: 4, 10, 15, / N = 3

Students' random self-reports. A few participants (6%) mention taking into consideration what preschoolers comment whenever they are engaged or when they avoid learning experiences. (References in the interviews: 2, 20, 33, 48, 67 / N = 5.

"Children are enthusiastic and impulsive. If they find an activity



enjoying, they willingly participate expressing their feelings and preferences. However, they don't engage in a boring activity.” (Interview No48).

Assessing activity results. 10% of the participants admit to assessing whether students are engaged or not, by observing the results of learning activities (ie drawing in groups). This is a method that enriches informal observations data regarding student engagement. (References in the interviews: 2, 20, 41, 55, 56, 63, 67, 68 / N = 8

”I usually evaluate learning outcomes, by which I can infer if teaching goals have been achieved.” (Interview No2).

Assessing with two-sided cards. One teacher uses two-sided cards to evaluate student engagement. (References in the interview:21 / N =1. She describes the procedure as follows:

”I use two-sided cards. On one side the word 'YES' is written and on the other the word 'NO'. Each student, holding such a card, show me whether or not has been participated in the activity just completed. Usually the process is done just before the students leave the class”.

Assessing with worksheets. 10% of the teachers use the worksheets to evaluate their student' engagement level (References in the interviews: 21, 26, 33, 41, 59, 65, 73, 76 / N = 8

”I use worksheets to see if each student is engaged in conversation or activities. If worksheets are correctly completed, I get informed not only about what they have learned, but also whether they have been engaged or not.” (Interview No 33).

Portfolio. 20% of participants report using portfolio as another alternative assessment method so as to assess student engagement. Through sampling, observing, comparing and evaluating each student's sketches, worksheets and photos draw their conclusions about his/her engagement level. (References in the interviews: 3, 4, 7, 9, 12, 17, 33, 38, 43, 49, 52, 53, 57, 68, 70, 79/N= 16

5.2 Teachers' Perspectives with Regards To the Use and the Significance of Assessing Methods/Tools for Student Engagement

The above mentioned data (open-ended question 191) is confirmed by the data of the close-ended questions 192-198, which have been quantitatively analyzed with the SPSS. These questions referred to assessing methods / tools the researcher had chosen based on previous classroom research. The answers were formulated as follows:

A. In the closed-ended questions (192A-198A), the dichotomous scheme was used with two alternative answers (Yes - No), in order to record whether teachers use each assessing method / tool of student engagement.



B. In the closed-ended questions (192B-198B) teachers were asked to define the significance they attribute to specific assessing methods and tools of student engagement. A five-point Likert scale was used with the values corresponding to “5=Very Significant 4=Significant” “3= Neither Significant, Nor Insignificant” “2= Insignificant” “1= Very insignificant”.

At the following figure (Figure 2), teacher’s perspectives with regards to the use and the significance of assessing methods/tools are jointly presented.

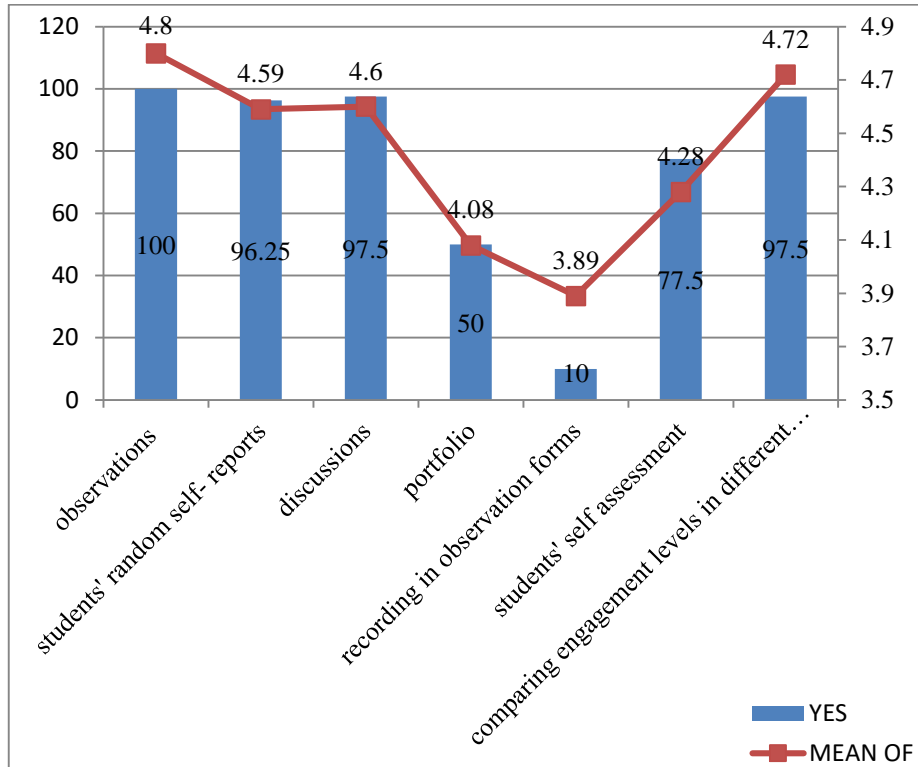


Figure 2: Teachers’ perspectives with regards to the use and the significance of assessing methods/tools for student engagement.

Observations. The data that came up by the close-ended question 192A (*Do you observe if children in your class are engaged in educational activities?*) demonstrates that the participant teachers as a whole respond positively admitting to making informal observations, so as to evaluate engagement levels of preschoolers. In addition, according to the data based on the statistical analysis of the close-ended question 192B, teachers regard observation as the most significant assessing method of student engagement (mean of significance degree: 4,8).

Students' random self-reports According to the data in question 193A, (*do you take into consideration students' random oral self-reports during an*



activity or when an activity is over?) the vast majority of participants (96,25%) give a positive response showing that they get informed about preschooler's engaging based on their random oral self-reports (i.e. spontaneous expressions of enthusiasm, happiness etc). In addition, according to the statistical analysis of the close-ended question 193B, using random self-reports is regarded to be one of the most significant assessing methods of preschoolers engagement (mean of significance degree:4,59).

Discussions. In closed-ended question 194A (*Do you ask questions focused on student engagement?*), teachers in their majority (78%) admit that, in order to assess student engagement, they ask questions that are focused on their engagement level intending to facilitate preschoolers' self- reflection. Furthermore, according to the data of the close-ended question 194B, teachers regard discussion as one of the most significant assessing methods of student engagement (mean of significance degree:4,6).

Portfolio. According to the data in closed-ended question 195A (*Do you make use of portfolio, evaluating a children's works?*), one-half of the interviewees (50%) refer that they evaluate student engagement through sampling, comparing and evaluating work of students. In addition, based on the close-ended question 195B, portfolio is regarded as a significant assessing method / tool of student engagement (mean of significance degree:4,08).

Recording in observation forms. In the closed-ended question 196A, (*Do you record your remarks in observation forms or checklists?*) the vast majority of interviewees (90%) state that they do not record data regarding student engagement in observation forms which contain pre-determined characteristics of student engagement. Besides, according to the statistical analysis of the close-ended question 196B, teachers do not consider it significant to record current student engagement (mean of significance degree:3,89).

Students' self-assessment. In closed-ended question 197A, (*Do you generally involve preschoolers in self-assessing processes regarding their engagement?*) 77.5% of teachers respond positively. This question was general, in order to combine data and confirm interviewees' previous responses. In addition, according to the statistical analysis of the close-ended question 197B they consider students' self assessment being a very significant assessing method of student engagement (mean of significance degree:4,28).

Comparing engagement levels in different phases. In the closed-ended question 198A (*Do you compare student engagement displayed at different phases in a school year?*) positive responses by the vast majority of teachers (97.5%) demonstrate that teachers compare the levels of student engagement displayed at different phases, in order to evaluate whether preschoolers are



engaged in a learning experience monitoring progress. In addition, according to the statistical analysis of the close-ended question 198B, teachers regard comparisons among different phases of utmost significance as assessing method of student engagement (mean of significance degree:4,72).

6 Conclusions

A key to increasing student engagement is finding efficient ways to measure it. When something is measured, summarized, and reported, it becomes important, and people pay attention (Jones, 2008). Assessing student engagement is more than evaluation of learning outcomes. An effective assessment of student engagement relates to and is prerequisite of successful learning process. When teachers try to find out whether students are engaged, they have to assess not only the learning outcomes, but also the learning process itself; they have to take into consideration not only behaviours, but also emotions and cognitive procedures that the engaged students exhibit. That's why it's very difficult to assess student engagement during regular class instruction.

Challenging is the choice of the right assessing methods or tools, as well. Research community on student engagement use different of assessing methods ie observations at both the individual and classroom level or teacher ratings which are accurate and relate to students' self-reports measures of student engagement (Skinner & Pitzer, 2012). However, can these assessing methods be effectively used in a typical class and particularly in preschool environments?

According to the findings presented above, Greek kindergarten teachers use a variety of assessing methods and tools to evaluate preschoolers' engagement level and combine them according to the case and learning goals. Additionally, teachers attribute high significance to each assessing methods / tools, except of recording student engagement in observation forms. Expectedly, the significance that teachers attribute to each assessing method/ tool of student engagement defines whether a method is applied or not during regular class instruction in preschool settings. Our findings also demonstrate that observation is the basic assessment method of student engagement, as it is used at a high frequency in everyday students' daily lives in school, confirming previous research findings (Aydogan, Farran & Sagsoz 2015; Calvert. et. al, 2005). However observations are informal, since observation data is rarely recorded (i.e in personal notebook). In addition, teachers use discussions with students offering them the chance of self-reflection. This is very important, since student's voice is heard presenting their learning needs, frustrations, concerns, and aspirations. However, such a discussion is informal, as well, since data is not recorded in a form with specific behavioral, cognitive and emotional engagement indices, helping teachers to



systematically evaluate engagement levels and accordingly set learning goals. Discussion with peers is important, too, even if it's not so commonly used. Exchanging information among peers confirms what an individual teacher perceives as engagement indices and at the same time contributes to exchanging effective teaching practices that can foster student engagement.

Taking into account the aforementioned, classroom research is important to provide teachers with new “tools” that can enrich assessing methods of student engagement and enhance the learning process. Teachers' perspectives in the current research indicate the need of constructing tools in which student engagement both at individual and classroom level can be systematically recorded, proving teachers a clear feedback. Systematic recording would improve teaching practices and learning; when a teacher constructs himself a recording form with various manifestations of student engagement, which he considers important, focuses on specific behaviors and thus, easily and effectively evaluates student engagement (Sakellariou, 2005). Wouldn't it be, however, more effective, if such recording forms were validated by research findings?

Future research should focus on exploring and evaluating classroom or individual engagement assessing techniques so as to facilitate teachers and school psychologists to screen individual children in either typical and special needs populations, or those at risk. At the same time, teachers are invited to modify the usual teacher-centred teaching and assessing practices and set the students in the centre of the learning process (Sakellariou, 2012; Sakellariou and Tsiara, 2017). Alternative assessing methods such as using portfolio should be more commonly used giving students the opportunity to express their needs, preoccupations, interests, (Sakellariou, 2012; 2005). Besides, further training and support for teachers would decisively help in systematic assessment of student engagement.

7 Limitations

Interviews can provide a detailed descriptive account of how teachers construct meaning about classroom engagement. However, interviews are not without problems. The knowledge, skills, and biases of the interviewer can all affect quality, depth, and type of responses. There are also questions about the reliability and validity of interview findings.

Additionally, we consider it important to mention that the results of this research as a whole should be interpreted with caution given the small sample and be considered as a first step at the research level that aims to highlight important issues with regard to assessing of student engagement. Besides it isn't clear if teachers assessing refers to individual or in group student engagement.



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ⁱ These observational measures use a form of momentary time sampling, in which an observer records whether a predetermined category of behavior is present or absent for an individual student during a defined time interval.

ⁱⁱ The Learning Criteria is arranged in four dimensions that school leaders can use to determine the success of their schools in preparing students for current assessments and future roles and responsibilities. These four dimensions of the Learning Criteria are: 1. Foundation Academic Learning, 2. Stretch Learning, 3. Learner Engagement and 4. Personal Skill Development.