Positioning Dispositions in Initial Teacher Education: An Action Research Approach

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Abstract: In spite of debate, ambiguity, and tension around teacher dispositions, in the past over two decades, the place of dispositions in initial teacher education (ITE) has been widely supported among policy makers and researchers. Specifically, debate on whether dispositions are teachable has largely given way to action to foster dispositions. Adopting a two-cycle participatory action research design, this study explored ways to teach the first-year teacher candidates' dispositions in an early childhood ITE programme in New Zealand. The intervention included eight focus dispositions and corresponding strategies to teach each focus disposition. Data collection methods included student self-assessment surveys, individual and focus group interviews with students and teaching staff, team meetings, and a variety of pedagogical documentation. Ethnographic content analysis generated three themes: legitimacy of the intervention, experiential orientation of the intervention, and effect of the intervention. The study exemplifies how dispositions intervention can be incorporated in ITE programmes.

Introduction

Dispositions has been a topic that engenders a heated debate among teacher education researchers and practitioners (Borko et al., 2007; Ruitenberg, 2011), in particular, whether dispositions can be operationalised as observable traits and whether dispositions are malleable (Borko et al., 2007; Diez, 2007; Nelsen, 2015). Over four decades ago, the status of dispositions in initial teacher education (ITE) was undecided, specifically, some "anti-reductionism" researchers were adamantly against the idea of introducing dispositions into teacher education because they believed that dispositions were not teachable (e.g., Salter & Crompton, 1980). Meanwhile, some other researchers proposed that "professional dispositions be added to professional knowledge and skills as goals for teacher education

programmes" (Katz & Raths, 1985, p.301). In 2000, the US National Council for Accreditation of Teacher Education included dispositions in teacher professional standards, resulting in dispositions incorporated in teacher education curricula and assessed in teacher candidates (Borko et al., 2007; Burant et al., 2007; Diez & Raths, 2007). In recent years, there has been increasing research interest in the role of dispositions in teaching (e.g., Kim & Zimmerman, 2017; McGraw & McDonough, 2019; Truscott & Stenhouse, 2022; Warren et al., 2021).

Understanding "Dispositions"

The term *dispositions* in the education discipline originates from John Dewey's early work, specifically, *dispositions* is referred to as "underline motivator" and "organizer" for behaviour (Dewey, 1922), and is a habit growing from our experiences (Dewey, 1938). Built on Dewey's conception, *dispositions* is defined as: "a habit of mind under some conscious and voluntary control intentional to broad goals" (Katz, 1993, p. 16). Habits of mind include "both cognitive and affective attributes that filter one's knowledge, skills, and beliefs and impact the action one takes in classroom or professional setting" (Thornton, 2006, p. 62). *Dispositions* has also been defined as:

- "an attributed characteristic of a teacher, one that summarizes the trend of a teacher's actions in particular contexts" (Katz & Raths, 1985, p. 306);
- "acquired patterns of behaviour that are under one's control and will as opposed to being automatically activated" (Ritchhart, 2002, p. 31);
- "individual's tendencies to act in a particular manner" (Borko et al., 2007, p. 361);
- "part of a set of larger abilities that include knowledge, skill, values, beliefs, and commitments" (Diez, 2007, p. 394);
- internal attributes that motivate action, a tendency to act in a certain way, or the choice to act in certain ways (Bair, 2017).

Instead of defining dispositions, some researchers attempted to determine the dimensions or constructs of dispositions, for example, a three-dimensional construct including professionalism, teaching quality, and relationship with others (Flowers, 2006), a concept observable from three lenses (i.e., as dimensions of personality, as patterns of behaviours, and as cultivatable human qualities) which is character-related or competence-related (Jung & Rhodes, 2008). Dispositions are believed to be acquired by experiences with others and are not static traits (Feiman-Nemser & Schussler, 2010).

Teacher Dispositions

Due to the importance of dispositions for teaching, a focus on dispositions has been mandated in many jurisdictions through accrediting bodies (e.g., AAQEP, 2022; CAEP, 2022). Schussler (2006) articulated, "Dispositions are a guiding source for a teacher's ability to process knowledge and act in particular ways" (p. 259). According to Schussler and Bercaw (2022), "Dispositions entered the teacher education lexicon as a way to capture a dimension of teaching that extended beyond knowledge and skills" (p.115). Brock and Pennington (2014) explored three American teachers' dispositions towards learning about racial, cultural, and linguistic diversity, and found that dispositions shaped how they positioned themselves as learners. Aloi and Bialka (2022) emphasised that dispositions, knowledge, and skills are three interdependent constructs of teacher competence and the development of one construct affects the growth of another. Warren et al.'s (2022) study

highlighted the role of teacher dispositions in the teachers' social and emotional competencies and transformative social and emotional learning.

There is a lack of consensus on the dispositions that are most important for teaching. Hillman et al. (2006) designed a tool for identifying and evaluating dispositions which include 44 items grouped under seven categories. Shiveley and Misco (2010) articulated the need for operationalising definitions and determining assessments needed to evaluate dispositions. Phelps and Benson (2012) described commonalities among teachers who had sustained passion for the teaching profession. In constructing a scale for assessing physical education students' dispositions for learning sport education, Bessa et al. (2022) identified key indicators of dispositions including personal responsibility, confidence, dedication, vigor, enthusiasm, self-confidence, meaning and self-determination. In the context of New Zealand early childhood initial teacher education, Warren et al. (2021) explored how shared understandings of professional teaching dispositions were negotiated within teaching and learning processes and networks of relationships. West et al. (2020) developed and validated a teacher disposition scale which included five dimensions: motivation to teach; teacher efficacy; willingness to learn; conscientiousness; and interpersonal and communication skill.

Fostering Teacher Dispositions in Teacher Education

There is increasing consensus that teacher education needs to do something about dispositions rather than simply "talk the talk", as Schussler (2006) articulated,

If teacher education programs want to foster the development of teacher candidates' dispositions - as opposed to merely assessing candidate dispositions - the definition I present necessitates that teacher education programs modify their practices in a number of ways. (p.263).

For many years, teacher education researchers have been designing effective strategies for fostering dispositions (Diez, 2007; Diez & Raths, 2007; Dottin, 2009; Johnson & Reiman, 2007). Helm (2006) underlined modeling to be a key strategy, as he elaborated,

The teachers in teacher education programs must make the students aware of the key dispositions, and then model them for the entire duration of the program. Ideally, this would occur early in the program and be constantly modeled by the educators and those in the field. (p.118)

Dotger's (2010) study utilised a 15-week intervention with teacher candidates aiming to develop dispositional multicultural awareness and ethical sensitivity. Carroll's (2012) case study investigated the development of dispositions for ambitious teaching. Kim and Zimmerman (2017) explored how the cultivation and manifestation of dispositions in teaching practice depended on both professional and personal transformation. Warren (2018) argued for a mechanism that teacher candidates may utilize to cultivate dispositions that lead to greater teaching effectiveness. Altan et al. (2019) created a conceptual framework for enhancing teaching dispositions using certain concepts including habits of mind and intelligent behaviours.

The latest line of literature mirrors teacher educators' sustained interest in "teaching" the teacher candidates' dispositions. Burton et al. (2022) found that teacher candidates' affective dispositions toward teaching were enhanced through instructional planning via virtual experiences. Fikriyatii et al (2022) developed and validated a critical thinking cycle model as an intervention to promote critical thinking disposition among science teacher candidates. With the proposition that pedagogical orientations foster domain specific teacher dispositions, Truscott and Stenhouse's (2022) study found that pedagogical orientations foster domain specific teacher dispositions.

Operational Definition and Significance of the Study

Drawing on classical definitions of dispositions (Dewey, 1938; Jung & Rhodes, 2008; Katz, 1993; Thornton, 2006) and within the context of teacher education, for convenience of operationalizing teacher dispositions, *teacher dispositions* is defined in this study as:

A cognitive or affective habit of mind that enhances a teacher's character or competence to perform teaching-related tasks in a professional and effective manner.

According to our operational definition, for anything to be labeled as teacher dispositions, it needs to meet four criteria: (1) It is a habit of mind; (2) it is cognitive or affective; (3) it is character or competence related; (4) it is essential to good teaching.

In this study, we exemplified how some of the most important dispositions can be fostered in an ITE programme. The aim of the study was to propose a formulaic approach that can offer an exemplary model for designing dispositions intervention in other ITE settings. The extant literature shows little, if any, research on the topic with the same intent, and the study addressed such a research gap. The research question was: How can dispositions be taught in an ITE programme?

Methodology

Defined by its aim, the study was intervention focused. The study was designed as participatory action research where a problem was investigated in its context (Yin, 2017) and the practitioners were agents of the change and co-researchers (Kemmis & McTaggart, 1988; McTaggart, 1991). The study was framed within the incremental view that conceives teacher dispositions to be malleable and teachable (Brock & Pennington, 2014; Diez, 2007) and the context of an early childhood ITE programme of a public institute of technology in the North Island of New Zealand. The action research followed cyclical stages of "plan, act, observe, and reflect" (McTaggart, 1991) and included two cycles. Completed during January - December 2017 and January - December 2018 respectively, both cycles of the action research followed four stages: development of intervention (plan), implementation (act), data collection (observe), and data analysis (reflect).

The Participants

The student participants included 47 students of the Diploma in Early Childhood Education Level 5 programme in Cycle 1 and 32 students of the following cohort of the same programme in Cycle 2. As the first year of a three-year Bachelor of Teaching (Early Childhood) programme, the one-year diploma programme was a content course with two three-week field placements. All student participants were female except two male students in each cohort. The majority of the students in both cohorts were between 18 to 25 years old. We chose to use different cohorts for the two cycles for three reasons: (1) Since the purpose of the study was to construct and evaluate an intervention model rather than make change to one same group of students, it was not essential to use the same student participants for the two cycles; (2) It would make the intervention artificial rather than authentic to implement the intervention twice with the same students; (3) Some students on the one-year diploma programme would choose to graduate rather than proceed with the bachelor programme. Teacher educator participants included the Head of Department, the placement coordinator, and four course lecturers who were involved in the dispositions intervention and provided

data. The participatory action research design legitimated the co-researcher role of all staff participants (Kemmis & McTaggart, 1988).

The Intervention

The intervention included focus dispositions and strategies to teach each focus disposition. A 38-item Graduate Capability Framework (Scott, 2016; Zhang, 2021) was used for the teaching team to choose focus dispositions from for intervention. The selection criteria were: (1) The degree of relevance and importance of the dispositions to early childhood teaching; (2) The degree of malleability and teachability of the dispositions within a limited duration of time. The teaching team were allowed to select dispositions that were not on Scott's (2016) Graduate Capability Framework. The teaching team firstly consulted the local advisory committee (LAC). The LAC consisted of six members who were all owner or manager of an early childhood services. At the LAC meeting, each LAC member was invited to select their top five items, then at the teaching team meeting, the LAC version of focus dispositions was reviewed and revised. By the beginning of Cycle 2, eight dispositions were selected for intervention, and all the selected focus dispositions were on Scott's (2016) Graduate Capability Framework. The teacher educators brainstormed and developed a pool of strategies to teach the focus dispositions. Table 1 shows the eight focus dispositions and the strategies used for teaching each disposition. The teaching team compared the concepts of "graduate capability" and "teacher dispositions", and decided to use the discipline specific term "teacher dispositions" for this study. The eight selected capabilities all conformed to the operational definition of "teacher dispositions" in this study, for example, "maintaining a good work/life balance" denoted a cognitive or affective habit of mind that enhances a teacher's intention and effort to juggle the demands of work and life in a balanced way.

Focus dispositions	Strategies
Maintaining a good work/life balance	Conversation around the relevant scenario; Collective reflection on the relevant aspect; Case study; Discussion over the relevant scenario; Daily work planner
Remaining calm under pressure	Experience sharing
Willingness to persevere when things are not working out as anticipated	Reading books containing the relevant theme/value; Conversation around the relevant scenario; Collective reflection on the relevant aspect; Role playing the relevant scenario; Practicum debriefing; Case study.
Giving and receiving constructive feedback	Practicum debriefing; Triadic meeting of practicum; Peer assessment
Empathising and working productively with people from a wide range of backgrounds	Role playing the relevant scenario; Group activity; Purposive and strategic grouping of students; Discussion over the relevant scenario; Experience sharing
Contributing positively to team-based programs	Reading books containing the relevant theme/value; Case study; Group activity; Purposive and strategic grouping of students
Setting and justifying priorities for my daily work	Goal setting for practicum and other papers; Daily work planner; Selection of readings
Making sense of and learning from experience	Conversation around the relevant scenario; Practicum debriefing; Triadic meeting of practicum; Experience sharing

Table 1: Focus dispositions and strategies

For both cycles, the intervention was implemented in Semester 2 (July - November).

While teaching staff of all courses in Semester 2 (Communication for ECE Teachers, Introduction to Curriculum, Diversity, Professional Practice 2) offered to "embed" the intervention in their routine teaching, to ensure a minimum dosage of intervention, the lecturer of *Professional Practice 2* (in preparation for practicum) was designated the task of implementing all strategies and teaching all eight focus dispositions during the 14 weekly class sessions. The lecturer of the practicum course provided detailed pedagogical documentations that evidenced the implementation of the intervention as collectively designed. Although there was no research evidence of what "a minimum dosage" should be, we postulated in our study that timetabled and structured experience with the eight focus dispositions was essential.

Data Collection

Data were collected using a range of methods including student self-assessment survey, individual interview, focus group interview, meeting minutes, and pedagogical documentation. All data collection methods were used to measure the effect of teaching intervention for all focus dispositions.

The student self-assessment survey was administered before and after the intervention for both cohorts of students. On a five-point Likert scale (from 1 = strongly disagree to 5 = strongly agree), the pre- and post- intervention surveys asked the students to indicate to what extent they agree or disagree with each of the statements that were derived from the focus dispositions (e.g., "I maintain work/life balance", "I remain calm under pressure", "I persevere when things are not working out as anticipated").

Since some students preferred to be interviewed individually and some were more comfortable with talking in a group, both individual and focus group interviews were arranged. Individual interviews were conducted with six and eight student participants after the intervention in Cycle 1 and Cycle 2 respectively. The overarching interview questions were: *How did your tutors teach you these dispositions? How much did you learn about these dispositions as a result? What else do you think your tutors can do to help you learn these dispositions?* One focus group student interview was conducted after the intervention in Cycle 1 and Cycle 2 (four and six student participants respectively). The interview questions were similar to those for the individual interviews.

Individual interviews were conducted with all the teacher participants after the intervention in Cycle 1. The overarching interview questions were: *How did you help your students to learn the dispositions? How much do you think your students learned about these dispositions as a result? What else do you think you can do to help students learn these dispositions?*

Monthly hour-long meetings were held with the teaching team to discuss matters relating to the action research project exclusively. A five-minute "teacher chat" on the action research project took place at the beginning of the weekly team meetings. The informal "teacher chat" moments generated insights which were intuitive, improvisational, and fortuitous. By chatting, hidden issues were brought up to the fore for further discussion.

The forms of pedagogical documentation included: video recordings, photos, staff reflection notes, student work sample and reflective folder. While individual members of the teaching team kept their own pedagogical documentation predominantly for the purpose of teaching only, the pedagogical documentation purposefully prepared by the lecturer of the practicum course was highly relevant to the action research project.

The ethics approval was jointly granted by the external funder and the researchers' employing institution. Prior to data collection, the students were given a participant

information sheet which contained information on the study and our promises to protect the participants including, for example, voluntary participation, confidentiality, and right to withdraw. In particular, we ensured the students that non-participation would not have any consequence. To minimise the effect of potential power relationship, all student interviews were conducted by the first author who did not teach the students. All student interviews were audio recorded with permission. The student work samples were accessed with permission. All interviews were transcribed *verbatim*.

Data Analysis

The pre- and post- intervention student self-assessment surveys were analysed using paired samples (repeated measures) t-test.

Qualitative data were analysed adopting ethnographic content analysis (ECA). The purpose of data analysis in this study was to examine the legitimacy and effectiveness of the intervention, and ECA served the purpose well. ECA assumes that the meaning of a message is reflected in various modes of information exchange, the context and other nuances which requires the researcher to move reflexively between concept developing, sampling, data collection, data coding, and interpretation (Altheide, 1987; 2008). ECA is "an integrated method, procedure, and technique for locating, identifying, retrieving, and analyzing documents for their relevance, significance, and meaning. The emphasis is on discovery and description of contexts, underlying meanings, patterns, and processes" (Altheide, 2008, p.287). "Documents" in this study included interview transcripts, meeting minutes, and textual information obtained from video clips, portfolio and work samples. Throughout the analytical process, the researchers placed great emphasis on "constant discovery and constant comparison of relevant situations, settings, styles, images, meanings and nuances" (Altheide, 1987, p.68). Different to conventional content analysis, ECA was reflexive and circular, which dominated the whole analytical process of this study. All qualitative data were initially analysed by the principal investigator who obtained endorsement from the research team through in-depth discussion in relevant meetings.

Findings

The paired-samples t-tests for the student self-assessment survey results found no statistically significant effect of the intervention. For Cycle 1, the analysis reveals no significant difference between mean score before intervention (M=4.11; SD=0.51) and that after intervention (M=4.12; SD=0.78); t (46) = 1.67, p = 0.055. Also, for Cycle 2, there was no significant difference between mean score before intervention (M=4.10; SD=0.50) and that after intervention (M=4.11; SD=0.75); t (31) = 2.01, p = 0.065.

Qualitative data (interview transcripts, meeting minutes, student work samples, teacher reflective notes) were analysed using ECA. Treating the data as both in field and in documents, through constant discovery and constant comparison of relevant contexts, messages, and relationships, we found that the many seemingly divergent categories (e.g., "teacher chat", "labelling", "mind map", "room for improvement") converged into only several common themes. These themes were different to what was described in the literature, nor were they simple descriptions of the intervention process. Without the ECA analytical process, these themes would not have become explicit. Given the exploratory nature of this action research study, we perceived these themes to be meaningful and substantial findings of this study. As below presents, the three themes were: legitimacy of the intervention,

experiential orientation of the intervention, and effect of the intervention.

Legitimacy of the Intervention

       The theme consisted of two sub-theme: *significance of dispositions* and *justification for methods*.

Significance of Dispositions

       Learning dispositions is a pivotal concept in early childhood teaching, which defined the unique relation between the ITE programme and the intervention, as a teaching staff illustrated,

> *I think using dispositions is a very useful thought because in that way it is kind of embedded in our programme too, which related to what we expect our students to be doing, role modeling, visible learning. This was also what I did with the early childhood children. That's our model, if you look at what the dispositions are to be a successful early childhood teacher, the model is that they understand what dispositions are needed for themselves to be a good early childhood teacher. [Interview Transcript Lecturer 08]*

Another teaching staff suggested,

> *Teaching dispositions links to what we expect them to do when they are teaching, so this is a role model approach. This is visible learning. When you work with students, this adds to their thinking on developing children's dispositions too. (Interview Transcript Lecturer 03)*

Since dispositions were not only the learning goals of the teacher candidates but also the learning goals of young children, the dispositions intervention was not only passively embedded in, but also actively consolidating, the ITE programme. The focus dispositions were something the teaching staff must address in their class in any way.

Justification for Methods

       The ECA analysis showed that the methods used by the teaching team to select focus dispositions and teaching strategies were prudent and justifiable. The Head of Department described, *"Most of the items on the ... are dispositions which are highly relevant to our teaching."* The teaching team sought and deliberated on advice from the the Local Advisory Committee (LAC) on focus dispositions. As a result, "having energy, passion and enthusiasm for my profession" (1.10) recommended by the LAC was not included in the intervention. "Urgency" and "feasibility" were unwittingly adopted by the teaching team as selection criteria in addition to the explicitly stated "degree of importance", as below excerpt elaborated,

> *People on the LAC are mostly registered teachers and maybe they were unaware that we are actually teaching our year one students who are still far away from being registered. Passion and enthusiasm are not immensely important at the moment compared to other dispositions. Also, passion and enthusiasm are difficult to teach. [Meeting Minutes 01]*

The strategies to teach each focus disposition were contributed by the teaching team. Drawing on their own teaching experiences and life experience with dispositions, and in particular, in response to the real needs of their students, the teaching staff collectively co-

constructed the list of strategies. The intervention was locally determined rather than externally imposed, as a lecturer articulated,

> *It's not about resources or guidance ... we have plenty of ideas on teaching dispositions. The issue is we had never had opportunities like this to intentionally, specifically, and exclusively think about teaching dispositions. They might be on graduate profiles but they seldom, if at all, appear as learning outcomes of a particular course. [Interview Transcript Lecturer 02]*

Experiential Orientation of the Intervention

The ECA analysis revealed that all strategies used in the intervention were linked to one or more of eight types of learning experience, namely, contextualizing, explaining, defining, assessing, reflecting, labelling, exemplifying, and documenting. These types of learning experience would potentially change the students' cognitive or affective habit of mind which constitutes fundamental elements of dispositions according to the operational definition of this study. Acronymized as CedarLED (Figure 1), the eight types of learning experiences were:

Contextualising: The focus dispositions were interpreted in the context of ITE and that of early childhood education;

Explaining: The students were explained to about what the dispositions were and why they were important both for children's learning and for themselves as teacher candidates;

Defining: The students were encouraged to describe in writing what each focus disposition looked like in own words;

Assessing: The students were encouraged to assess their level of each focus disposition;

Reflecting: The students were encouraged to reflect on and write down their approaches to strengthening each disposition;

Labelling: The students were encouraged to describe what happened in relation to a disposition and name the disposition;

Exemplifying: Examples of a disposition were provided to help the students get an accurate picture of what the disposition looked like in context so that they were able to replicate the dispositions in similar contexts;

*Documenting***:** The students were encouraged to write a learning story about how they displayed certain dispositions to bring that to their consciousness and make it visible.
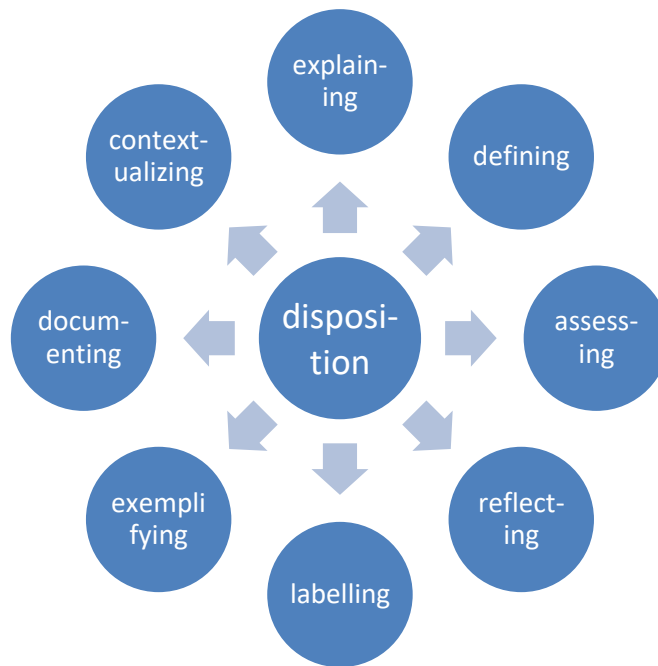
Figure 1: The Cedar-LED learning experiences

The eight types of learning experiences featured the opportunities for the teacher candidates to be supported to understand and enact the focus dispositions rather than what were done by the teacher educators. The theme foregrounded the classically recognised central role of experiences in the growth of dispositions (Dewey, 1938).

Effect of the Intervention

The student self-assessment surveys on their level of dispositions revealed no statistically significant effect of the intervention, however, the ECA analysis of the qualitative data showed that the students' self-assessment surveys might not reflect their real progress in dispositions. In a post survey interview, one student said,

I did not quite understand the words in the first survey…so it was simply my gut feeling, and I hated to rate myself low. After the intervention, I knew what those words meant and you know the room for improvement, so I rated low... which does not mean I was not doing well but that I expected more after I knew better. (Interview Transcript Student 10)

The teachers believed that the intervention did have an impact on the students' dispositions. One teacher observed,

The action research certainly had changed the students' dispositions to varying degrees. Even completing the dispositions survey was meaningful experience. The language used in the survey questions exposed the students to the terminology which was the foundation of all conscious efforts to take actions on the dispositions. (Meeting Minutes 05)

Another teacher articulated,

The students enjoyed the dispositions intervention activities. They completed a range of types of written work including mind maps and forms, which supported them to understand the theoretical underpinning of what they were expected to do. (Meeting Minutes 02)

A remarkable impact of the dispositions intervention on the students was the

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enhanced ability to reflect on dispositions related issues. There were many examples of such reflections which touched on some sensitive and contentious educational issues. One of the themes of reflection emerged from the student interviews was: "Are dispositions teachable?" One excerpt from the interview transcript best illustrates the depth of the reflection,

> *Disposition has to be self-taught…something you need to learn on your own because no one can actually teach you how to prioritise these, for example, it is your own life, they can give us input, yeah it can't be a mentor thing, they can't say you must do this way, they just give input and suggestions, not something we are going to get told to do, there does not need to be an assignment on that. I think it's personal thing that people have to do for themselves. (Interview Transcript Student 05)*

Another excerpt reads,

> *I do think it is teachable, but not by a tutor in the front trying to teach us, that's not going to work, and I don't know how they could. I think it is teachable by having the whole support from your class, your teachers and classmates, everyone support. (Interview Transcript Student 04)*

Discussion
Are Dispositions Teachable, and How Do We Know?

The action research was designed under the premise that dispositions are teachable and ITE can play a part in teaching dispositions (Brock & Pennington, 2014; Burant et al., 2007; Diez, 2007). The teaching team certainly believed dispositions to be teachable otherwise they wouldn't have had the motivation to design, deliver and evaluate the intervention. Two concepts need to be distinguished: "teachable", and "worth teaching". Whether something is teachable is a factual question and whether something is worth teaching is a value question. Being teachable depends on many contextual factors, including who are teaching and who are being taught, what dispositions are being taught, and where the teaching is taking place. In this study, we presented such contextual factors within the context of initial teacher education and that of early childhood education. We demonstrated that eight dispositions were most worth teaching within the specific context of our study. Since the teacher candidates were preparing to enter ECE, the ITE context in our study was largely simulation of the ECE context.

Understanding what dispositions are needed for effective teaching and demonstrating effective dispositions in a field experience (ECE classroom) are two different things which need to be evaluated in two different ways. One can easily measure "understanding" of dispositions in a self-assessment survey to a certain extent, but it was not easy to capture a change of dispositions in a limited period. In spite of the effort to "measure" dispositions (e.g., Bessa et al., 2022; Diez, 2006; West et al., 2020), there lack convincing tools to assess the changes in dispositions in educational settings, which remained an obstacle in this study. Also, due to the limited magnitude of intervention in both intensity and length of time, it was not surprising that no statistically significant effect was found for the intervention. As a remedy, the qualitative data were collected from the lecturers and students about the effectiveness of the intervention. The qualitative data were predominantly reflective thoughts and critical analyses, and played a pivotal role in reaching a conclusion in this study.

Focus Dispositions and How They Should Be Determined

There used to be debate on whether teacher educators know what dispositions teacher candidates need to possess (Salter & Crompton, 1980). In the meetings, the teaching team and the LAC members were actively contributing their ideas, and they knew the focus dispositions well although the teaching team and the LAC selected different focus dispositions. It is worth noting that the teaching team's decision prevailed. According to the teaching team, the LAC might be adopting the professional standards and overlooking the fact that the students were only in their first year. It remained a question who should have the final say in determining the list of focus dispositions. Given the different perspectives held by different people, who make the list of focus dispositions may determine what the list looks like. Previous studies on teacher dispositions tended to select different focus dispositions based on the researchers' interest, including, for example, dispositional multicultural awareness and ethical sensitivity (Dotger, 2010), dispositions for ambitious teaching (Carroll, 2012), affective dispositions toward teaching (Burton et al., 2022), and critical thinking dispositions (Fikriyatii et al., 2022).

The eight focus dispositions in this study are certainly not universally applicable. It seems to be good practice that certain focus dispositions are selected from a comprehensive list, for example, the Scott's (2016) Graduate Capability Framework. "List" of dispositions used to be criticized as "reductionism" (Salter & Crompton, 1980), yet without itemizing dispositions, where do we start to do anything about dispositions in ITE? If we can't do anything about dispositions, what is the point of us debating on dispositions? The study raised three practical questions relevant to dispositions: Where do we select the focus dispositions from? Who has the final say in selecting the focus dispositions? What dispositions do we select? While there is not a one-size-fits-all answer to these questions, the study offers an exemplar of how these questions can be addressed.

How Much Should ITE Programmmes Do about Dispositions?

In this study, eight focus dispositions were selected, but why was it eight? The teaching team agreed that items should not be too many for intervention. Hence the question: How many are not too many or too few but just enough for intervention? Initially, the teaching team adopted a "thumb of rule" approach to decide that top five would be ideal. Three more dispositions were added in Cycle 2, which considered three facets: (1) level of importance; (2) level of urgency (it is more urgent to teach the students some dispositions than to teach them other dispositions); (3) level of feasibility (it is more convenient to teach some dispositions than to teach other dispositions. How much an ITE programme should do about dispositions largely depends on how much it can do in the particular context without "disturbing" the existing curriculum system. Therefore, it appears that "dosage" of dispositions intervention should be determined on a practical convenience basis, for example, a three-week STEM camp in Burton et al.'s (2022) study, a 15-week parent/caregiver conferencing model in Dotger's (2010) study, and the one-semester long cycle of intervention in our study.

It is unclear how many focus dispositions are optimal, however, it is certain that starting with some dispositions are necessary and safe. It is also doable that ITE addresses dispositions from the first day of the student's entry into ITE rather than until the student's final or graduating year, as Bridgstock (2009, p.40) concluded, "*for universities to fully engage with the graduate employability agenda, the careful integration of career management skill development into courses from first year is necessary, with ongoing input and feedback from faculties, industry, careers staff and students.*" In our action research, the sampled programme was the first year of a three-year course, hence the timeliness.

Contributions of the Study

The action research project made several contributions. The study addressed dispositions intervention in a structured way. Specifically, the study included a certain number of focus dispositions, strategies to teach those dispositions, and evaluation of the intervention. The dispositions intervention formed a conceptually separate potential curriculum embedded in the academic programme. Since the researchers of this study were practitioners in teaching settings without extra personnel or resource support, our model of intervention stands a better chance of being replicable in other ITE settings, at least in terms of Michael Bassey's "fuzzy generalisation" for social research contexts (Bassey, 2001). The intervention formalized and synthesized sundry dispositions fostering practices, and serves a formulaic scaffold for teaching dispositions in ITE programmes in other contexts. The process of the action research yielded valuable data that help deepen our understanding of some important concepts related to dispositions, including malleability of dispositions and effectiveness of intervention. The data were collected in real practice of dispositions teaching, and were authentic and reflective of dispositions in action. The study also exposed several issues around action research including evaluation and validity, which is unlikely to emerge in a non-research situation.

Limitations to the Study and Future Direction

This participatory action research is by nature exploratory, and has several limitations. In this study, variables were not controlled that might influence the students' dispositions, which makes it difficult to affirm the effect of the intervention. Also, it is questionable whether teacher candidates can learn certain dispositions in a limited period of time. Further, there was a lack of data on the effect of the intervention on the students' employability which should be ideally collected from employers rather than teacher educators. To overcome these limitations, it is ideal that the student participants are followed up in longitudinal, quasi-experimental studies. Future research can also look into how specific strategies interact with the characteristics of individual students from diverse socioeconomic backgrounds.

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